

ADITYA ENGINEERING COLLEGE An Autonomous Institution

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Syllabus of the courses where the revision was carried out program wise in the Academic Year: 2017-2018

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1	B. Tech (Civil Engineering)	1
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4	B. Tech (Electronics and Communication Engineering)	93
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Department of Civil Engineering

Syllabus revision Index for the Academic Year 2017-2018 B.Tech Civil Engineering

S.No	Name of the course	Percentage of syllabus change
1	English-I	65
2	English-II	55
3	English Communication Skills Lab-II	40
4	Mathematics - I	° 40
5	Environmental Studies	20
6	Engineering Chemistry	25
7	Engineering Chemistry LAB	20
8	Computer Programming Lab	40
9	Mathematics - III	40
10	Engineering Physics	25



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	 English-II 	English-I ·
Title		
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
*)	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW-
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	
	Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. ' The Chief Software Architect'	
	from English Encounters	
	2. ' Srinivasa Ramanujan' from The Great	
	Indian Scientists.	

Signature of the course coordinator

Signature of the HOD

Head of the Departm Department of H 8 Adity Engineering College



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	'Mathematics-I	Mathematics-I •
Title		
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equationsEquations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax V(x), xV(x)-
	V(x), xV(x)- Method; of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
	¥.	Problems using the command 'dsolve')
		Applications: Electric circuits, simple
		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
	theorems - Transforms of derivatives and	Solution of linear systems - Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method.
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms- Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	
	differential equations (initial value	
	problems) using Laplace transforms.	
1	UNIT IV: Partial differentiation:	UNIT IV: Eigen values - Eigen vectors and
1	Introduction- Homogeneous function-	Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain	vectors- Properties of eigen values
	ruleGeneralized Mean value theorem for	(without proof) – Cayley -Hamilton

single variable (without proof)-Taylor's and Mc Laurent's series expansion of functions of two variables— Functional dependence— Jacobian. Applications: Maxima and Minima of functions of two variables—without constraints and Lagrange's method (with constraints).

theorem (without proof) - Inverse and powers of a matrix by using Cayley - Hamilton theorem- Diagonalization-Quadratic forms- Reduction of quadratic form to canonical form using orthogonal transformation— Nature of the quadratic form. *(MATLAB Exercise: All Basic Operations on matrices are to be implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors)

UNIT V: First order Partial differential equations: Formation of partial differential equations by elimination of arbitrary 'constants and arbitrary functions –solutions of first order linear (Lagrange) equation and nonlinear (standard types) equations.

UNIT V: Partial differentiation and Partial differential equations: Homogeneous function-Euler's theorem-Total derivative-Chain rule-Taylor's and Maclaurin's series expansion of functions of two variables-Functional dependence Jacobian. Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions -solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically).

UNIT VI: Higher order Partial differential equations: Solutions of Linear Partial differential equations; with constant coefficients. RHS term of the type e^(ax+by), sin(ax+by), cos(ax+by), x^m y^n Classification of second order partial differential equation

G - V . Russes Coordinator

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Head of the Department
Department of H.8.1
Aditya Engineering Correct



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Environmental Studies	Environmental Studies
Title		
Course	R161 108	171HS1T02/171HS2T02
Code	,	
	UNIT - I Multidisciplinary nature of	UNIT –I: Ecosystems: Scope of
	Environmental Studies: Definition, Scope	environmental studies, Structure-
	and Importance -Sustainability:	
	Stockholm and Rio Summit-Global	Function – Food chain, Food web, Tropic
	Environmental Challenges: Global	
	warming and climate change, Carbon	Ecological pyramids, nutrient recycling,
	Credits, acid rains, ozone layer depletion,	primary and secondary production,
Syllabus	population growth and explosion, effects.	ecosystem regulation. Ecological succession
Synabus	Role of information Technology in	Terrestrial ecosystem and aquatic
	Environment and human health.	ecosystem - Introduction, types,
	Ecosystems: Concept of an ecosystem	characteristic features.
	Structure and function of an ecosystem	
	Producers, consumers and decomposers.	
	- Energy flow in the ecosystem -	
	Ecological succession Food chains, food	
	webs and ecological pyramids	
	Introduction, types, characteristic	
	features, structure and function of Forest	
	ecosystem, Grassland ecosystem, Desert	
	ecosystem, Aquatic ecosystems.	
İ	UNIT - II Natural Résources: Natural	UNIT – II: Natural Resources: Natural
1	resources and associated problems	resources and associated problems Forest
1	Forest resources – Use and over –	resources – Use and over – exploitation,
	exploitation, deforestation - Timber	deforestation – Timber extraction – Mining,
	extraction – 'Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	
	resources – Use and over utilization of	people Water resources – Use and over
1	surface and ground water - Floods,	utilization of surface and ground water –
- 1	drought, conflicts over water, dams –	Floods, drought, conflicts over water, dams
1	benefits and problems Mineral resources:	- benefits and problems Mineral resources:
	Use and exploitation, environmental	Use and exploitation, environmental effects
	environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT III Biodiversity conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and Jocal levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts Endangered and endemic species of India Conservation of biodiversity: conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: Sources. Classification. effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and

UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Engineering Chemistry	Engineering Chemistry
Title		Engineering Chemistry
Course	R161105	171BS1T03
Code		1.1551105
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT- I: High Polymers and Plastics:
	Polymerisation:- Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
Cullabus	regular polymers - methods of	- Physical and mechanical properties –
Syllabus	polymerization (emulsion and	Plastics as engineering materials.
	suspension) -Physical and mechanical	advantages and limitations —
	properties - Plastics as engineering	Thermoplastics and Thermosetting plastics
	materials : advantages and limitations -	- Compounding and fabrication
	Thermoplastics and Thermosetting	(compression moulding injection
	plastics – Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques) - Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers :- Natural rubber-	Elastomers - Natural rubber- compounding
	compounding and vulcanization –	and vulcanization - Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol – Applications of
	Thiokol and polyurethanes – Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	3
	Fiber reinforced plastics – Biodegradable	
}	polymers – Conducting polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels -	UNIT - II: Fuel Technology: Fuels:-
-	Introduction – Classification – Calorific	Introduction - Classification - Calorific
	value - HCV and LCV – Dulong's formula –	value - HCV and LCV - Dulong's formula -
1	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis –
	- Coal — Proximate and ultimate analysis	Significance of the analyses – Liquid fuels –
- 1	- Significance of the analyses - Liquid	Petroleum- Refining – Cracking – Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol –Petrol knocking – Diesel knocking -
1	Synthetic petrol –Petrol knocking – Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents – Power alcohol – Bio-diesel –
	Anti-knock agents – Power alcohol – Bio-	Gaseous fuels - Natural gas. LPG and CNG -
	diesel – Gaseous fuels – Natural gas, LPG	Combustion – Calculation of air for the

	Foaming,	Scale	formation,	Boiler
	corrosion,	Caustic	embrittlen	nent -
l	Internal tre	atments	- Softening	of Hard
	water : Lin	ne – So	da process.	Zeolite
l	process and	numeri	cal problems	based
	on these p	rocesses	and Ion Ex	change
	process - W	ater for	drinking pu	rnoses-
	Purification	_	Sterilization	and
	disinfection	: Chloril	nation, Break	noint
	chlorination	and d	other metho	bount
	Reverse Osm	osis and	Electro Dialys	ic –
	UNIT VI: CH	EMISTRY	OF ENGINE	EDING

MATERIALS AND FUEL CELLS Refractories:
- Definition, characteristics, classification, properties, failure of refractories Lubricants: - Definition, function, Theory and mechanism of lubricants, properties (Definition and importance) Cement: - Constituents, manufacturing, hardening and setting, deterioration of cement Insulators: - Thermal and electrical insulators Fuel cells: - Hydrogen Oxygen fuel cells - Methanol Oxygen fuel cells

formation, Boiler corrosion, Caustic embrittlement - Internal treatments - Softening of Hard water: Lime – Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes - Purification – Sterilization and disinfection: Chlorination, Break point chlorination and other methods – Reverse Osmosis and Electro Dialysis.

Dr. Dine Signature of the course coordinator

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Signature of the HOD

Head of the Department
Department of H & BS

Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post Post
Course	English -I	Post-Revision
Title		English-II
Course	R161101	1711102702
Code		171HS2T03
	UNIT I: 1. 'Human Resources' from	UNIT-I: 1. TECHNOLOGY WITH A HUMAN
	English for Engineers and Technologists	FACE (Detailed)
	2. 'An Ideal Family' from Panorama: A	2. AN IDEAL FAMILY (Non-Detailed)
	Course on Reading	
	UNIT 2: 1. ' Transport: Problems and	UNIT-II: I. CLIMATE CHANGE AND
	Solutions' from English for Engineers and	HUMAN STRATEGY (Detailed)
	Technologists.	2. WAR (Non-Detailed)
	2: 'War' from 'Panorama : A Course on	
	Reading'	
	UNIT 3: 1. 'Evaluating Technology' from	INIT III. I CAERCEIG
	English for Engineers and Technologists.	UNIT-III: 1. EMERGING TECHNOLOGIE (Detailed)
	2. 'The Verger' from 'Panorama : A	2. THE VERGER (Non-Detailed)
	Course on Reading	(ron beamed)
- [UNIT 4: 1. 'Alternative Sources of Energy'	INIT IV. 1 THE GROOM
1	from English for Engineers and	UNIT-IV: 1. THE SECRET OF WORK (Detailed)
1	Technologists.	2. THE SCARECROW (Non-Detailed)
1	2. ' The Scarecrow' from Panorama : A	(Non-Detailed)
- 1	Course on Reading	
	UNIT 5: 1. 'Our Living Environment' from	INIT V. 1 WORK PROSES
	English for Engineers and Technologists.	UNIT-V: 1. WORK BRINGS SOLACE (Detailed)
	2. 'A Village Host to Nation' from	2. A VILLAGE LOST TO THE NATION
	Panorama : A Course on Reading	(Non-Detailed)
	UNIT 6: 1. ' Safety and Training' from	
	English for Engineers and Technologists.	
	2. 'Martin Luther King and Africa' from	
1	Panorama : A Course on Reading	
	anorama . A course on keading	

Signature of the course coordinator

No.

Signature of the HOD
Head of the Department of H & L
Aditya Engineering College (A.)



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-III •	Mathematics-III
Title	·	
Course	R161203	171BS2T06
Code		
	UNIT I: Linear systems of equations:	UNIT - I: Laplace transforms: Laplace
	Rank-Echelon form-Normal form -	transforms of standard functions-First
	Solution of linear systems – Gauss	Shifting theorem, Change of scale,
C-II-b	elimination - Gauss Jordon- Gauss Jacobi	Multiplication with t, Division by t -
Syllabus	and Gauss Seidal methods. Applications:	Transforms of derivatives and integrals –
	Finding the current in electrical circuits.	Unit step function –Dirac's delta function, Periodic functions.
	UNIT II: Eigen values - Eigen vectors and	UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen	Inverse Laplace transforms – Convolution
	vectors- Properties - Cayley-Hamilton	theorem (without proof), Second shifting
	theorem - Inverse and powers of a matrix	theorem. *(MATLAB Exercise: Computing
	by using Cayley-Hamilton theorem-	Laplace transform off (t) using symbolic
9	Diagonalization- Quadratic forms-	toolbox, Solving initial value problems using
	Reduction of quadratic form to canonical	'dsolve') Applications: Evaluating improper
	form – Rank - Positive, negative and semi	integrals, solving initial value problems
	definite - Index - Signature. Applications:	using Laplace transforms.
	Free vibration of a two-mass system.	
	UNIT III: Multiple integrals: Curve tracing:	UNIT - III: Multiple integrals and Beta,
	Cartesian, Polar and Parametric forms.	Gamma functions: Multiple integrals:
	Multiple integrals: Double and triple	Double and triple integrals - Change of
	integrals - Change of variables - Change	variables - Change of order of integration,
	of order of integration. Applications:	Beta and Gamma functions- Properties -
	Finding Areas and Volumes.	Relation between Beta and Gamma
		functions Applications: Finding Areas and Volumes.
	UNIT IV: Special functions: Beta and	UNIT - IV: Vector Differentiation: Gradient -
	Gamma functions- Properties - Relation	Directional Derivatives - Divergence- Curl -
	between Beta and Gamma functions.	Laplacian operator - Vector identities.
	Evaluation of improper integrals.	Applications: Equation of continuity,
	Applications: Evaluation of integrals.	potential surfaces
	UNIT V: Vector Differentiation: Gradient-	UNIT - V: Vector Integration: Line integral –
	Divergence- Curl - Laplacian and second	Work done - Surface and volume integrals,
	order operators -Vector identities.	Green's Theorem, Stokes Theorem and

Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
UNIT VI: Vector Integration: Line integral - Work done - Potential function - Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

Signature of the course coordinator

Signature of the HOD

Head of the Department Department of H & BS Aditya Engineering College (Ac.



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	Engineering Physics	· Engineering Physics
Course	R161204	
Code	K161204	171BS2T07
Syllabus		Superposition – Coherence – Interference in thin films (reflection geometry) – Newton's rings – construction and basic principle of Interferometer. UNIT-II: Diffraction: Fraunhofer diffraction at single slit - Cases of double slit, N-slits, 8

	UNIT-V CRYSTALLOGRAPHY & X-RAY	UNIT-V: Magnetism: Classification based on
	DIFFRACTION: Basis and lattice - Bravais	Field, Temperature and order/disorder –
	systems Symmetry elements- Unit cell-	atomic origin – Ferromagnetism-
	packing fraction - coordination number-	Hysteresis- applications of magnetic
	Miller indices - Separation between	materials (Para &Ferro). Dielectrics: Electric
	successive (h k l) planes - Bragg's law	Polarization – Dielectric in DC fields –
1	NUCLEAR ENERGY - SOURCE OF POWER:	Internal field –Clausius Mossoti Equation –
	Mass defect & Binding Energy - Fusion	Dielectric loss- Ferroelectric Hysteresis and
	and Fission as sources - Fast breeder	applications.
	Reactors.	
	UNIT-VI MAGNETISM: Classification	
	based on Field, Temperature and	0.44
	order/disorder -atomic origin -	
	Ferromagnetism- Hysteresis- applications	
	of magnetic materials (Para &Ferro)	
	DIELECTRICS: Electric Polarization -	
	Dielectrics in DC and AC fields - Internal	
	field - Clausius Mossoti Equation - Loss,	
	Breakdown and strength of dielectric	
	materials - Ferroelectric Hysteresis and	·
	applications.	*

Signature of the course coordinator

Signature of the HOD Head of the Department Department of H & BS Aditya Engineering College (AS)



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Department of Computer Science and Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title		
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, Is, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors —Turbo, vi, Emacs 1.2) C Program to Perform Addition, Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise - 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise - 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario - 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the
		Aditya purchased a credit card. He h

	to generate ATM PIN number. After
	generating PIN number, he can use it for
	further transactions. Maximum login he
	can make is 3 times.
	Sample Input:
	OTP: 6732
	If valid
	Enter PIN: 8858
	Confirm your PIN: 8858
	Sample output:
	valid/Invalid
	PIN generated successfully.
į (Note: OTP is hard coded.
	3.4) Scenario - 2 RESET PASSWORD:
	Sindhuja was using Syndicate Bank's
	Online Account. She wanted to pay her
	bills through Online. But she forget her
	password. Now she has to reset the
	password. For resetting the password.
	she has to select reset option from the
	Menu.
4	NOTE: using switch case.
	Sample input:
	1. Fast withdrawal
	2. Mini Statement.
	3. Balance Enquiry
	4. Reset Password
	Enter your choice: 4
	Sample Output: Reset password: New
×	password: ***** Confirm password

Exercise – 4 Control Flow - II	Exercise -4:
a) Write a C Program to Find Whether	Control Flow - II
the Given Number is	4.1) Write a C Program to Find Whethe
i) Prime Number	the Given Number is
ii) Armstrong Number	i) Prime Number
b) Write a C program to print Floyd	
Triangle	4.2) Write a C program to print Floye
c) Write a C Program to print Pascal	Triangle
Triangle	4.3) Write a C Program to print Pasca
*	Triangle
	Exercise - 5:
Exercise – 5 Functions	The state of the s
a) Write a C Program demonstrating	Control Flow – III

returning values. b) Write a C Program illustrating Fibonacci, Factorial with Recursion without Recursion. 5.2) Write a C program to read two numbers, x and n, and then compute the sum of the geometric progression [1+x+x2+x3++xn.] 5.4) Scenario - 3 Student Attendance report Generation: Some of the school staff had failed to maintain the attendance of the students, causing lack of essential records related to students attendance that should be submitted in a parents meet. The school management has decided to automate the process in order to maintain the attendance of every student effectively. You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not. Exercise - 6 Control Flow - III a) Write a C Program to convert decimal to binary and hex (using switchcase b) Write a C Program to convert decimal to binary and hex (using switch call function the function) Exercise 6: Arrays Exercise 7: Arrays Exercise 6: Arrays			
decimal to binary and hex (using switch call function the function) 6.4) Scenario - 4 Celebrity of the Week: Red FM has launched a program called Celebrity of the week in their channel. Listeners are given a toll free number where they can listen to list of celebrities. Listeners can choose their favourite celebrity from the list and vote for him/her. The votes are validated from Monday to Saturday. The one with highest votes is called as "Celebrity of the Week" and his/her songs are played in the program, which is aired on Sundays. Now write a program to find the celebrity of the week. Exercise - 7 Functions - Continued Write a C Program to compute the values of sin x and cos x and e^x. The votes are validated from Monday to Saturday. The one with highest votes is called as "Celebrity of the Week" and his/her songs are played in the program, which is aired on Sundays. Now write a program to find the celebrity of the week. Exercise - 7: Functions 7.1) Write a C Program to demonstrate		Exercise – 6 Control Flow - III a) Write a C Program illustrating Exercise – 6 Control Flow - III a) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase	whether given number is palindrome or not. 5.3) Write a C program to read two numbers, x and n, and then compute the sum of the geometric progression 1+x+x2+x3++xn. 5.4) Scenario - 3 Student Attendance report Generation: Some of the school staff had failed to maintain the attendance of the students, causing lack of essential records related to students attendance that should be submitted in a parents meet. The school management has decided to automate the process in order to maintain the attendance of every student effectively. You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not. Exercise 6: Arrays Demonstration of arrays 6.1) Linear Search. 6.2) Bubble Sort.
switchcase b) Write a C Program to convert decimal to binary and hex (using switch call function the function) Switch call function the function the function) Switch call function the function the function) Switch call function the function the function Switch call function the function the function the function Switch call function the function		 a) Write a C Program to make a simple Calculator to Add, Subtract, 	You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not. Exercise 6: Arrays Demonstration of arrays
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in the program, which is aired on Sundays. Now write a program to find the celebrity of the week. Exercise - 7 Functions - Continued Write a C Program to compute the values of sin x and cos x and e^x 7.1) Write a C Program to demonstrate			celebrities. Listeners can choose their favourite celebrity from the list and vote for him/her. The votes are validated from Monday to Saturday. The one with
Exercise - 7 Functions - Continued Write a C Program to compute the values of sin x and cos x and e^x Exercise - 7: Functions 7.1) Write a C Program to demonstrate			the Week" and his/her songs are played in the program, which is aired on Sundays. Now write a program to find
values of sin x and cos x and e'x 7.1) Write a C Program to demonstrate		Exercise - 7 Functions - Continued	
		Write a C Program to compute the	Functions
	1	values of sin x and cos x and e^x values using Series	7.1) Write a C Program to demonstrate parameter passing in Functions and

expansion. (use factorial function)	returning values. 7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario - 5 SELF DRIVE RENTAL Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars. iii) There are 3 categories in cars rental FOR SWIFT. In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km. In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km. In XI., 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
Exercise – 8 Arrays Demonstration of arrays a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	Exercise – 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario – 6 Word with

	Obesity: Jecth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
Exercises - 9 Structures a) Write a C Program to Store Information of a Movie Using Structure b) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	Exercise – 9: Arrays and Pointers 9.1) Write a C Program to Access Elements of an Array Using Pointer 9.2) Write a C Program to find the sum of numbers with arrays and pointers.
Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	Exercise – 10: Dynamic Memory Allocations 10.1) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc () function. 10.2) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function. Understand the difference between the above two programs
Exercise - 11 Dynamic Memory Allocations a) Write a C program to find sum of n elements entered by user. To perform this program,	Exercises – 11: Structures:

realization (Contract)

Information Using Structures with allocate memory dynamically using l malloc () function. Dynamically Memory Allocation b) Write a C program to find sum of n 11.3) Write a C Program to Add Two elements entered by user. To perform Complex Numbers by Passing Structure this program, to a Function allocate memory dynamically using 11.4) Scenario - 7 Library Management calloc () function. Understand the Shilpa student of PGEC got the Library difference between the Card. She wants to lend the books from the Library. The college gave two cards above two programs to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-Sample Input. Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR. Sample output No. of days returned after the due date = Late fee per day = Rs. 50 Fine paid by the student is 5 * 50 = 250. Exercise -12: Exercise - 12 Strings Files Implementation of string 12.1) Write a C program to open a file manipulation operations with library and to print the contents of the file on function. screen. i) copy 12.2) Write a C program to copy content ii) concatenate of one file to another file. iii) length iv) compare 12.3) Write a C program to merge two files and store content in another file. Implementation of string without 12.4) Scenario - 8 Student Information manipulation operations System Using Files: library function. Lakshya International school i) copy recently established and having large no ii) concatenate of admissions. The school management iii) length wanted the Student information to be iv) compare computerized and wanted to maintain in a simple and in effective manner. You asked to develop Student Information System using Files to perform the following tasks 1. Add New Student 2. Update Existing Student

	3. Delete Existing Student 4. Retrieve A Particular/All Students Sample Input: Choose the task you want to perform: 1. Add 2. Update 3. Delete 4. Retrieve Your choice: 1 Enter student details: Name: Akhil Age: 5 Class: 1 Sample Output: Student details added
Exercise -13 Files	
a) Write a C programming code to open a file and to print it contents on screen.	
b) Write a C program to copy files	
Exercise - 14 Files Continued	
a) Write a C program merges two files and stores their contents in another	
file.	
b) Write a C program to delete a file.	
Exercise – 15 a) System Assembling, Disassembling and identification of Parts / Peripherals. b) Operating System Installation-Install Operating Systems like Windows, Linux along with necessaryDevice Drivers.	
Exercise – 16	
a) MS-Office / Open Office i) Word - Formatting, Page Borders, Reviewing, Equations, symbols. ii) SpreadSheet - organize data, usage of	
formula, graphs, charts. iii) Powerpoint - features of power point, guidelines for preparing an	
effectivepresentation. b) Network Configuration & Software Installation-Configuring TCP/IP,	
Proxy, and firewallsettings. Installing application software, system software & tools.	

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Signature of the HOD



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Pre-Revision	Post-Revision
Engineering/Applied Chemistry Lab	Engineering Chemistry Lab
R161227/ R161118	171BS1L01
Introduction to Chemistry laboratory – Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc Trial experiment - Determination of HCl using standard Na2CO3 solution	Exercise 1: Introduction to Chemistry laboratory — Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc. Exercise 2: Trial experiment - Determination of HCl using standard Na2CO3 solution.
containing Na2CO3 and NaOH. 4. Determination of KMnO4 using standard Oxalic acid solution 5. Determination of Ferrous iron using standard K2Cr2O7 solution 6. Determination of Copper using	Exercise 3: Preparation of Phenol Formaldehyde resin (Bakelite). Exercise 4: Determination of KMnO4 using standard Oxalic acid solution. Exercise 5: Determination of ferrous iron using standard K2Cr2O7 solution. Exercise 6: Preparation of Bio-Diesel.
 Determination of temporary and permanent hardness of water using standard EDTA solution. 	Exercise 7: Determination of temporary and permanent hardness of water using standard EDTA solution. Exercise 8: Determination of Copper using
standard EDTA solution 9. Determination of Iron by a Colorimetric method using thiocynate as reagent.	standard EDTA solution. Exercise 9: Determination of Iron by a Colorimetric method using thiocynate as reagent.
10. Determination of pH of the given sample solution using pH meter. 11. Conductometric titration between strong acid and strong base.	Exercise 10: Determination of pH of the given sample solution using pH meter. Exercise 11: Conduct metric titration between strong acid and strong base.
12. Conductometric titration between strong acid and weak base.13. Potentiometric titration between strong acid and strong base.	Exercise 12: Conduct metric titration between strong acid and weak base. Exercise 13: Potentiometric titration between strong acid and strong base. Exercise 14: Potentiometric titration
	1. Introduction to Chemistry laboratory — Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc 2. Trial experiment — Determination of HCl using standard Na2CO3 solution 3. Determination of alkalinity of a sample containing Na2CO3 and NaOH. 4. Determination of KMnO4 using standard Oxalic acid solution 5. Determination of Ferrous iron using standard K2Cr2O7 solution 6. Determination of Copper using standard K2Cr2O7 solution 7. Determination of temporary and permanent hardness of water using standard EDTA solution. 8. Determination of Copper using standard EDTA solution 9. Determination of Iron by a Colorimetric method using thiocynate as reagent. 10. Determination of pH of the given sample solution using pH meter. 11. Conductometric titration between strong acid and strong base. 12. Conductometric titration between strong acid and weak base. 13. Potentiometric titration between

strong acid and weak base.	between strong acid and weak base.
 Determination of Zinc using standard EDTA solution. 	Exercise 15: Determination of Zinc using standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin - C.

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	TIC REVISION	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating ¹ Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
UNIT 3: 1. Presentation Skills Practice work PRAC	PRACTICE 3: Presentation Skills	
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
,	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Aditya Engineering College 14.

strong acid and weak base.	between strong acid and weak base.
15. Determination of Zinc using stand	dard Exercise 15: Determination of Zinc using
EDTA solution.	standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin – C.

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Department of Civil Engineering

Syllabus revision Index for the Academic Year 2017-2018 M.Tech Structural Engineering

S.No	Name of the course	Percentage of syllabus change
1	Experimental Analysis	20
	172SE1E01	
2	Structural Optimization	30
	172SE1E02	
3	Analysis & Design of Tall Buildings 172SE1E05	20
4	Plastics Analysis & Designing 172SE1E06	20



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Department of Civil Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulatio	Pre-Revision	Post-Revision
n		
Course	EXPERIMENTAL STRESS	EXPERIMENTAL STRESS
Title	ANALYSIS	ANALYSIS
Course	172SE1E01	172SE1E01
Code		
	UNIT-I Introduction and Strain	UNIT-I
	Measurement Methods Model &	Introduction and Strain
	Prototype Dimensional analysis-	Measurement Methods
	Factors influencing model design -	Model & Prototype Dimensional
	Scale factors and Model material	analysis-Factors influencing model
	properties - Methods of model	design - Scale factors and Model
	design. Definition of strain and its	material properties - Methods of
	relation to experimental	model design. Definition of strain and
	determinations - properties of strain	its relation to experimental
	gauge systems - Mechanical,	determinations - properties of strain
	Optical, Acoustic and Pneumatic	gauge systems - Mechanical, Optical,
	types.	Acoustic and Pneumatic types.
		2 8
	UNIT-II Electrical Resistance Strain	UNIT-II
	Gauges Introduction - gauge	Electrical Resistance Strain Gauges
	construction strain gauge adhesives	Introduction – gauge construction
	- mounting methods - gauge	strain gauge adhesives - mounting
	sensitivities and gage factor -	methods – gauge sensitivities and
	performance characteristics of wire	gage factor – performance
Syllabus	and foil strain gauges -	characteristics of wire and foil strain
	environmental effects. Analysis of	gauges – environmental effects.
	strain gauge data – the three-element	Analysis of strain gauge data – the
	rectangular rosette – the delta rosette	three-element rectangular rosette – the
	- correction for transverse	delta rosette – correction for
	sensitivity.	transverse sensitivity.
	UNIT -III Non - Destructive	
	Testing Introduction – objectives of	
	non destructive testing. Ultrasonic	Introduction – objectives of non
	pulse velocity method - Rebound	destructive testing. Ultrasonic pulse
	Hammer method (Concrete	velocitymethod – Rebound Hammer
	hammer) – Acoustic	method (Concrete hammer) –
	Emissionapplication to assessment	Acoustic Emission- application to
	of concrete quality	assessment of concrete quality.



UNIT-IV Theory of Photo Elasticity Introduction – temporary double refraction – Index ellipsoid and stress ellipsoid – the stress optic law – effects of stressed model in a polariscope for various arrangements - fringe sharpening. **UNIT-IV**

Distress Measurements and Control

Diagnosis of distress in structures -Crack observation and measurements -Corrosion of

Reinforcement in concrete - Half cell, construction and use - Damage identification -

Controlled blasting for demolition Techniques for residual stress
measurements.

UNIT-V Two Dimensional Photo Elasticity Introduction—iso-chromatic fringe patterns — isoclinic fringe patterns — compensation techniques — calibration methods — separation methods — materials for photo-elasticity — properties of photo-elastic materials.

UNIT-V

Two Dimensional Photo Elasticity

Introduction—iso-chromatic fringe patterns — isoclinic fringe patterns — compensation techniques — calibration methods — separation methods — materials for photo- elasticity — properties of photo-elastic materials.

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1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	STRUCTURAL OPTMIZATION	STRUCTURAL OPTMIZATION
Title		
Course	172SE1E02	172SE1E02
Code		
	UNIT-I Introduction Need and scope	UNIT-I
	for optimization - statements of	Introduction
	optimization problems- Objective function and its surface design variables- constraints and constraint surface- Classification of optimization problems (various functions continuous, discontinuous and discrete) and function behavior (monotonic and unimodal).	Need and scope for optimization – statements of optimization problems-Objective function and its surface design variables-constraints and constraint surface- Classification of optimization problems (various functions continuous, discontinuous and discrete) and function behavior (monotonic and unimodal). Design methodology- Civil engineering case study - Optimality criteria - Lagrange multiplier method - Kuhntucker Criteria.
Syllabus	IDUTE II. Classical Continuination	HARE H
	UNIT-II Classical Optimization Techniques Differential calculus method, multi variable optimization by method of constrained variation and Lagrange multipliers (generalized problem) Khun-Tucker conditions of optimality -Fully stressed design and optimality criterion based algorithmsintroduction, characteristics of fully stressed design th	UNIT-II Classical Optimization Techniques Differential calculus method, multi variable optimization by method of constrained variation and Lagrange multipliers (generalized problem) Khun- Tucker conditions of optimality -Fully stressed design and optimality criterion based algorithms- introduction, characteristics of fully stressed design theoretical basis- examples.

Dept. of Civil Engineering ADITYA ENGINEERING COLLEGE (A9) UNIT -III Non-Liner Programming Unconstrained minimization-Fibonacci, golden search, Quadratic and cubic interpolation methods for a one dimensional minimization and univariate method, Powel's method, Newton's method and Davidon Fletcher Powell's method optimizationmultivariable Constrained minimization- Cutting plane method Zoutendjik's methodpenalty function methods.

UNIT –III Non-Liner Programming

minimization-Unconstrained Fibonacci, golden search, Quadratic and cubic interpolation methods for a one dimensional minimization and univariate method, Powel's method, Newton's method and Powell's Davidon Fletcher method for multivariable Constrained optimizationminimization- Cutting plane method- Zoutendjik's methodpenalty function methods.

UNIT-IV Linear Programming
Definitions and theorems- Simplex
method-Duality in Linear
programmingPlastic analysis and
Minimum weight design and rigid
frame.

UNIT-IV Linear Programming

Definitions and theorems-Simplex method-Duality in Linear programming- Plastic analysis and Minimum weight design and rigid frame.

UNIT-V Introduction to Quadratic Programming Geometric programming- and dynamic programming- Design of beams and frames using dynamic programming technique.

UNIT-V Non Traditional Methods

Genetic Algorithm - Terminology Natural Law of Evolutions - Genetic
operators - steps for solution of
problems - Simulated Annealing Algorithm - Boltzman's equation - ANT
Colony optimization - Algorithm Pheromone trail - Travelling salesman
problem - Introduction to TABU search
- sample problem - Artificial Neural
Network - Application characteristics.

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1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	ANALYSIS AND DESIGN OF	ANALYSIS AND DESIGN OF
Title	TALL BUILDINGS	TALL BUILDINGS
Course	172SE1E05	172SE1E05
Code		
•	UNIT-I Design Philosophies and Materials Modern concepts – High Performance Concrete, Fibre Reinforced Concrete, Light weight concrete, Self Compacting Concrete	UNIT-I Design Philosophies and Materials Modern concepts – High Performance Concrete, Fibre Reinforced Concrete, Light weight concrete, Self Compacting Concrete.
Syllabus	UNIT-II Gravity Loading Dead load, Live load, Impact load, Construction load, Sequential loading. Wind Loading – Static and Dynamic Approach, Analytical method, Wind Tunnel- Experimental methods. Earthquake Loading – Equivalent lateral Load analysis, Response Spectrum Method, Combination of Loads	UNIT-II Gravity Loading Dead load, Live load, Impact load, Construction load, Sequential loading. Wind Loading – Static and Dynamic Approach, Analytical method, Wind Tunnel Experimental methods. Earthquake Loading – Equivalent lateral Load analysis, Response Spectrum Method, Combination of Loads
	UNIT –III Behavior of Structural Systems Factors affecting the growth, height and structural form, Behaviour of Braced frames, Rigid Frames, In-filled frames, Shear walls, Coupled Shear walls, Wall–Frames, Tubular, Outrigger braced, Hybrid systems.	UNIT –III Behavior of Structural Systems Factors affecting the growth, height and structural form, Behaviour of Braced frames, Rigid Frames, Infilled frames, Shear walls, Coupled Shear walls, Wall– Frames, Tubular, Outrigger braced, Hybrid systems.

UNIT-IV Analysis and Design Modelling for approximate analysis, Accurate analysis and reduction techniques, Analysis of structures as an integral unit, Analysis for member forces, drift and twist. Computerized 3D analysis. Design for differential movement, Creep and Shrinkage effects, Temperature Effects and Fire Resistance.

UNIT-IV Analysis and Design

Modelling for approximate analysis, Accurate analysis and reduction techniques, Analysis of structures as an integral unit, Analysis for member forces, drift and twist. Computerized 3D analysis. Design for differential movement, Creep and Shrinkage **Temperature** effects, Effects and Fire Resistance.

UNIT-V Stability Analysis Overall buckling analysis of frames, wall-frames, Approximate methods, Second order effect of gravity loading, P-Delta Effects, Simultaneous first order and PDelta analysis, Translational instability, Torsional Instability, Out of plumb effects, Effect of stiffness of members and foundation rotation in stability of structures

UNIT-V

Analysis and Behaviour of Tall Buildings

Linear and Non-linear behavior Material non-linearity Geometric non-linearity - Rigid
and Elastic Supports - First Order
Elastic Analysis - Second Order
Elastic Analysis - First order
Inelastic Analysis - Second order
Inelastic Analysis - Behavior of
Structural forms in Tall buildings
- Rigid frame, Braced Frames,
Shear Walls, Core walls, Tubular,
Belt truss, Outrigger (Concepts
only)

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1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	PLASTIC ANALYSIS AND	PLASTIC ANALYSIS AND
Title	· DESIGN	DESIGN
Course	172SE1E06	172SE1E06
Code		
	UNIT-I Introduction and Basic Hypothesis Concepts of stress and strain – relation of steel Moment curvature relation- basic difference between elastic and plastic analysis with examples- Yield condition, idealizations, collapse criteria-Virtual work in the elastic-plastic state-Evaluation of fully plastic moment and shape factors for the various practical sections	UNIT-I Introduction and Basic Hypothesis Concepts of stress and strain – relation of steel Moment curvature relation- basic difference between elastic and plastic analysis with examples- Yield condition, idealizations, collapse criteria- Virtual work in the elastic-plastic state- Evaluation of fully plastic moment and shape factors for the various practical sections.
Syllabus	UNIT-II Method of Limit Analysis Introduction to limit analysis of simply supported fixed beams and continuous beams, Effect of partial fixity and end, invariance of collapse loads, basic theorems of limit analysis, rectangular portal frames, gable frames, grids, superposition of mechanisms, drawing statistical bending moment diagrams for checks.	UNIT-II Method of Limit Analysis Introduction to limit analysis of simply supported fixed beams and continuous beams, Effect of partial fixity and end, invariance of collapse loads, basic theoremsof limit analysis, rectangular portal frames, gable frames, grids, superposition of mechanisms, drawing statistical bending moment diagrams for checks.



	UNIT –III Limit Design Principles Basic principles, limit design theorems, application of limit design theorems, trial and error method, method of combining mechanisms, plastic moment distribution method, load replacement method, continuous beams and simple frames designs using above principles.	UNIT –III Limit Design Principles Basic principles, limit design theorems, application of limit design theorems, trial and error method, method of combining mechanisms, plastic moment distribution method, load replacement method, continuous beams and simple frames designs using above principles.
	UNIT-IV: Deflection in Plastic Beams and Frames Load deflection relations for simply supported beams, deflection of simple pin based and fixed based portal frames, method of computing deflections.	UNIT-IV: Deflection in Plastic Beams and Frames Load deflection relations for simply supported beams, deflection of simple pin based and fixed based portal frames, method of computing deflections.
	UNIT-V Minimum Weight Design Introduction to minimum Weight and linear Weight functions- Foulkes theorems and its geometrical analogue and absolute minimum weight design.	UNIT-V Detailing and Field Practices Detailing for ductility - Measures of ductility - Flexural yielding in frames and walls - Flexural members in ductile frames - Columns and frame members subject to bending and axial load - Joints in ductile frames - shear walls - Fire resistance of structural members - Code requirements - Quality control of concrete

Signature of the course coordinator

Signature of the HOD





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Department of Computer Science and Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title ·		•
Course	R161119	171ES1L01
Code		
-	Exercise - 1 Basics	Exercise - 1
	a) What is an OS Command,	Introduction to C Programming
	Familiarization of Editors - vi, Emacs	1.1) Introduction about Editors –Turbo,
	b) Using commands like mkdir, ls, cp,	vi, Emacs
	mv, cat, pwd, and man	1.2) C Program to Perform Addition,
	c) C Program to Perform Adding,	Subtraction, Multiplication and Division
	Subtraction, Multiplication and	of two numbers from Command line
	Division of two numbers From Command line	1.3) Write a C Program to Calculate
last Co	Command line	area of a Triangle using Heron's formula.
		Tormura.
	Exercise - 2 Basic Math	Exercise – 2:
	a) Write a C Program to Simulate 3	Basic Math
Syllabus	Laws at Motion	2.1) Write a C Program to Find Whether
	b) Write a C Program to convert	the Given Year is a Leap Year or not.
	Celsius to Fahrenheit and vice versa	2.2) Write a C Program to convert
		Celsius to Fahrenheit and vice versa.
		2.3) Write a C Program to find largest of
		three numbers using ternary operator.
	Exercise - 3 Control Flow - I	Exercise – 3:
	a) Write a C Program to Find Whether	Control Flow - I
	the Given Year is a Leap Year or not.	3.1) Write a C program to find the roots
	b) Write a C Program to Add Digits &	of a Quadratic Equation.
	Multiplication of a number	3.2) Write a C Program to make a
		simple Calculator to Add, Subtract,
	4	Multiply or Divide Using switchcase.
		3.3) Scenario - 1 ATM PIN GENERATION:
		Aditya purchased a credit card. He has
		to generate a PIN number to access the
		ATM and Net banking for which OTP
		was sent to his registered mobile
		number. Using this OTP number he has

	to generate ATM PIN number. After
	generating PIN number, he can use it for
	further transactions. Maximum login he
	can make is 3 times.
	Sample Input:
	OTP: 6732
	If valid
	Enter PIN: 8858
	Confirm your PIN: 8858
	Sample output:
	valid/Invalid
•	PIN generated successfully.
	Note: OTP is hard coded.
	3.4) Scenario - 2 RESET PASSWORD:
	Sindhuja was using Syndicate Bank's
	Online Account. She wanted to pay her
z .	bills through Online. But she forget her
,	password. Now she has to reset the
	•
	password. For resetting the password,
	she has to select reset option from the
	Menu.
	NOTE: using switch case.
	Sample input:
	1. Fast withdrawal
	2. Mini Statement.
	3. Balance Enquiry
8	4. Reset Password
	Enter your choice: 4
	Sample Output: Reset password: New
	password: ***** Confirm password:
,	****
Exercise – 4 Control Flow - II	Exercise -4:
a) Write a C Program to Find Whether	Control Flow - II
the Given Number is	4.1) Write a C Program to Find Whether
i) Prime Number	the Given Number is
ii) Armstrong Number	i) Prime Number
b) Write a C program to print Floyd	ii) Armstrong Number
Triangle	4.2) Write a C program to print Floyd
c) Write a C Program to print Pascal	Triangle
Triangle	4.3) Write a C Program to print Pasca
	Triangle
Exercise – 5 Functions	Exercise – 5:
a) Write a C Program demonstrating	
a) Wille a C Hogiam demonstrating	

returning values.	of individual digits of a positive integer.
b) Write a C Program illust	
Fibonacci, Factorial with Reco	
without Recursion.	not.
	5.3) Write a C program to read two
	numbers, x and n, and then compute the
	sum of the geometric progression
	$1+x+x^2+x^3++x^n$
	5.4) Scenario - 3 Student Attendance
	report Generation:
	Some of the school staff had failed to
	maintain the attendance of the students,
	causing lack of essential records related
	to students attendance that should be
	submitted in a parents meet. The school
	management has decided to automate
	the process in order to maintain the
	attendance of every student effectively.
*	You are asked to write a program to the
	above scenario and display whether the
	student is allowed to write the Exam or
	not.
Exercise – 6 Control Flow - III	Exercise 6:
a) Write a C Program to m	1
simple Calculator to Add, Su	
Multiply or Divide Using	6.1) Linear Search.
switchcase	6.2) Bubble Sort.
b) Write a C Program to c	
decimal to binary and hex	
switch call function the	Red FM has launched a program called
function)	Celebrity of the week in their channel.
Tunction)	Listeners are given a toll free number
	where they can listen to list of
	celebrities. Listeners can choose their
	favourite celebrity from the list and vote
	for him/her. The votes are validated
	from Monday to Saturday. The one with
	highest votes is called as "Celebrity of
	the Week" and his/her songs are played
	in the program, which is aired on
	Sundays. Now write a program to find
	the celebrity of the week. ued Exercise – 7:
	ned Evercise _ 7°
Exercise – 7 Functions - Contin	
Write a C Program to compu	nte the Functions
	ate the Functions

expansion. (use factorial funct	7.2) Write a C Program to find Fibonacci, Factorial of a number with
	Recursion and without Recursion. 7.3) Scenario – 5 SELF DRIVE RENTAL
	Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental
	cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as
	follows. i) Minimum booking is 4.
	ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT,
	• In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km.
	• In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km.
	o In XL, 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
Exercise – 8 Arrays Demonstration of arrays	Exercise – 8:
a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	Strings 8.1) Implementation of string manipulation operations with library function.
	8.2) Implementation of string manipulation operations without library function.
	i. copy ii. concatenate iii. length
	iv. compare i. copy ii. concatenate iii. length
	iv. compare 8.3) Verify whether the given
	string is a palindrome or not 8.4) Scenario – 6 Word with

	Obesity: Jeeth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
Exercises - 9 Structures a) Write a C Program to Store Information of a Movie Using Structure b) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	9.1) Write a C Program to Access Elements of an Array Using Pointer
Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	Exercise – 10: Dynamic Memory Allocations 10.1) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc () function. 10.2) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function. Understand the difference between the above two programs
Exercise – 11 Dynamic Memory Allocations a) Write a C program to find sum of n elements entered by user. To perform this program,	Exercises – 11: Structures: 11.1) Write a C Program to Store Information of a book Using Structure 11.2) Write a C Program to Store

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date = 5

Late fee per day = Rs. 50 Fine paid by the student is 5 * 50 = 250.

Exercise - 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

- 1. Add New Student
- 2. Update Existing Student

	3. Delete Existing Student
	4. Retrieve A Particular/All Students Sample Input:
	Choose the task you want to perform:
	1. Add 2. Update 3. Delete 4. Retrieve
	Your choice: 1 Enter student details:
*	Name: Akhil Age: 5 Class: 1
	Sample Output: Student details added
Exercise -13 Files	bampie output. Student details added
a)Write a C programming code to	
open a file and to print it contents on	
screen.	
b)Write a C program to copy files	
Exercise - 14 Files Continued	
a) Write a C program merges two files	
and stores their contents in another	
file.	
b) Write a C program to delete a file.	9
Exercise – 15	
a) System Assembling, Disassembling	
and identification of Parts /	
Peripherals. b) Operating System	
Installation-Install Operating Systems	
like Windows, Linux along with	
necessaryDevice Drivers.	
Exercise – 16	
a) MS-Office / Open Office	
i) Word - Formatting, Page Borders,	
Reviewing, Equations, symbols. ii)	
SpreadSheet - organize data, usage of	
formula, graphs, charts.	
iii) Powerpoint - features of power	
point, guidelines for preparing an	
effectivepresentation.	
b) Network Configuration & Software	
Installation-Configuring TCP/IP,	
Proxy, and firewallsettings. Installing	
application software, system software	
& tools.	

Signature of the Course Coordinator

Signature of the HOD



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Department of Electrical and Electronics Engineering

Syllabus revision Index for 2017-2018

S. No	Name of the course	Percentage of syllabus change
1	English – I	65
2	Mathematics - I	40
3	Environmental Studies	20
4	Applied Chemistry	20
5	Computer Programming Lab	40
6	English - II	55
7	Mathematics - III	40
8	Applied Physics	20
9	English Communication Skills Lab - II	40
10	Electrical Machines-I	80
11	Electrical Machines-II	65
12	Electrical Machines -I Laboratory	60

Head of The Department
Dept: Of Electrical & Electronics Engineering
Aditva Engineering College (A9)



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	· English-II	English-I ·
Title		
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW-
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	\$ 120
	Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. ' The Chief Software Architect'	
	from English Encounters	
	2. ' Srinivasa Ramanujan' from The Great	
	Indian Scientists.	
	moran selentises.	

Signature of the course coordinator

Signature of the HOD

Head of the Denartm Department of H.R. Aditya Engineering Carrage



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-I	Mathematics-1
Title		
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equationsEquations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax $V(x)$, $xV(x)$ -
	V(x), $xV(x)$ - Method of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
		Problems using the command 'dsolve')
		Applications: Electric circuits, simple
		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
	theorems - Transforms of derivatives and	Solution of linear systems – Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms - Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	electrical circuits.
	differential equations (initial value	
	THE PARTY OF THE P	
	problems) using Laplace transforms. UNIT IV: Partial differentiation:	HAUT IV. Figgs values Figgs vest-
		UNIT IV: Eigen values - Eigen vectors and
	Introduction- Homogeneous function-	Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain	vectors – Properties of eigen values
	ruleGeneralized Mean value theorem for	(without proof) – Cayley -Hamilton

single variable (without proof)-Taylor's and Mc Laurent's series expansion of functions of two variables— Functional dependence— Jacobian. Applications: Maxima and Minima of functions of two variables—without constraints—and Lagrange's method (with constraints).

theorem (without proof) - Inverse and powers of a matrix by using Cayley - Hamilton theorem- Diagonalization-Quadratic forms- Reduction of quadratic form to canonical form using orthogonal transformation—Nature of the quadratic form. *(MATLAB Exercise: All Basic Operations on matrices are to be implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors)

UNIT V: First order Partial differential equations: Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions—solutions of first order linear (Lagrange) equation and nonlinear (standard types) equations.

UNIT V: Partial differentiation and Partial differential equations: Homogeneous function-Euler's theorem-Total derivative-Chain rule-Taylor's and Maclaurin's series expansion of functions of two variables-Functional dependence Jacobian. Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions -solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically).

UNIT VI: Higher order Partial differential equations: Solutions of Linear Partial differential equations with constant coefficients. RHS term of the type e^(ax+by), sin(ax+by), cos(ax+by), x^m y^n Classification of second order partial differential equation

G-V. Russes

10%

Signature of the HOD
Head of the Department of M. A.
Aditya Engineering C. A.



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course Title	Environmental Studies	Environmental Studies
Course Code	R161108	171HS1T02/171HS2T02
Syllabus	UNIT – I Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. – Food chains, food webs and ecological pyramids Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems.	UNIT –I: Ecosystems: Scope of environmental studies, Structure-Producers, consumers and decomposers Function – Food chain, Food web, Tropic structure and Energy flow in the ecosystem Ecological pyramids, nutrient recycling, primary and secondary production, ecosystem regulation. Ecological succession Terrestrial ecosystem and aquatic ecosystem - Introduction, types, characteristic features.
	UNIT – II Natural Resources: Natural resources and associated problems Forest resources – Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems Mineral resources: Use and exploitation, environmental	UNIT – II: Natural Resources: Natural resources and associated problems Forest resources – Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT -Biodiversity and conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India Conservation of conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act-Issues involved in enforcement of environmental legislation. -Public awareness.

of people; its problems and concerns.
Global challenges Environmental ethics:
Issues and possible solutions.
Environmental Protection Act - Air
(Prevention and Control of Pollution) Act. –
Water (Prevention and control of Pollution)
Act -Wildlife Protection Act - Forest
Conservation Act-Issues involved in
enforcement of environmental legislation. Public awareness and Environmental
management.

UNIT – VI Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism, Green Campus – Green business and Green politics.

The student should Visit an Industry / Ecosystem and submit a report individually on any issues related to Environmental Studies course and make a power point presentation.

Signature of the course coordinator

Pay.

Signature of the HOD

Head of the Department
Department of H & BS
Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Applied Chemistry	Applied Chemistry
Course	R161106/R161221	171BS1T05/171BS2T05
Syllabus	UNIT I: HIGH POLYMERS AND PLASTICS Polymerisation : Introduction- Mechanism of polymerization - Stereo regular polymers - methods of polymerization (emulsion and suspension) -Physical and mechanical properties - Plastics as engineering materials : advantages and limitations - Thermoplastics and Thermosetting plastics - Compounding and fabrication (4/5 techniques)- Preparation, properties and applications of polyethene, PVC, Bakelite Teflon and polycarbonates Elastomers - Natural rubber- compounding and vulcanization - Synthetic rubbers : Buna S, Buna N, Thiokol and polyurethanes - Applications of elastomers. Composite materials & Fiber reinforced plastics - Biodegradable polymers - Conducting polymers.	UNIT - I: High Polymers and Plastics: Polymerization: Introduction- Mechanism of polymerization - Stereo regular polymers - Physical and mechanical properties - Plastics as engineering materials: advantages and limitations - Thermoplastics and Thermosetting plastics - Compounding and fabrication (compression moulding, injection moulding, extrusion moulding and transfer moulding techniques)- Preparation, properties and applications of polyethene, PVC, Bakelite and polycarbonates. Elastomers - Natural rubber- compounding and vulcanization - Synthetic rubbers: Buna S, Buna N, Thiokol - Applications of elastomers. Biodegradable polymers.
	UNIT II: FUEL TECHNOLOGY Fuels:- Introduction — Classification — Calorific value - HCV and LCV — Dulong's formula — Bomb calorimeter — Numerical problems — Coal — Proximate and ultimate analysis — Significance of the analyses — Liquid fuels — Petroleum- Refining — Cracking — Synthetic petrol —Petrol knocking — Diesel knocking — Octane and Cetane ratings — Anti-knock agents — Power alcohol — Bio- diesel — Gaseous fuels — Natural gas. LPG and CNG — Combustion — Calculation of air for the combustion of a fuel — Flue gas	UNIT - II: Fuel Technology: Fuels:- Introduction – Classification – Calorific value - HCV and LCV – Dulong's formula – Coal — Proximate and ultimate analysis – Significance of the analyses – Liquid fuels – Petroleum- Refining – Cracking – Synthetic petrol –Petrol knocking – Diesel knocking - Octane and Cetane ratings – Anti-knock agents – Power alcohol – Bio-diesel – Gaseous fuels – Natural gas. LPG and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus.

analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Introduction, classification, examples: RDX, TNT and ammonium nitrite - rocket fuels

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion:-Definition - Theories of Corrosion (electrochemical) - Formation of galvanic different metals, cells by concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series – Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Electroless Tinning, Electroplating, plating)

III: Electrochemical Cells and Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses this series- Standard electrodes (Hydrogen and Calomel electrodes) Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) -Formation of galvanic cells by different metals, by concentration cells, by aeration and differential waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Superconductors:- Type-I & Type-2, properties & applications Green synthesis:- Principles - 3or 4 methods of synthesis with examples – R4M4 principles

UNIT V: SOLID STATE CHEMISTRY Types of solids - close packing of atoms and ions - BCC , FCC, structures of rock salt - cesium chloride- spinel - normal and inverse spinels, Non-elemental

UNIT - IV: Chemistry of Advanced Materials: Nano materials:-Introduction – Sol-gel method - Carbon nano tubes and fullerenes: Types, preparation, properties and applications. Super conductors: -Type – I, Type II – Characteristics and applications Semiconductors: - Preparation of semiconductors, working of diods and transistors. Green synthesis: -Principles Liquid crystals:-Introduction – Types – Applications Fuel cells: - Introduction - cell representation, H2-O2fuel cell: Design and working, advantages and Limitations. Types of fuel cells: methanol-oxygen fuel cells.

UNIT - V: Non-Conventional Energy Sources: Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) – photovoltaic cell: design, semiconducting Materials:Stoichiometric, controlled valency &
Chalcogen photo/semiconductors,
Preparation of Semiconductors
Semiconductor Devices:- p-n junction
diode as rectifier – junction transistor.
Insulators (electrical and electronic
applications) Magnetic materials:- Ferro
and ferri magnetism. Hall effect and its
applications.

working and its importance Non-conventional energy sources: (i)
Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introduction-schematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction- Design and working-movement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels.

UNIT VI: NON CONVENTIONAL ENERGY SOURCES AND STORAGE DEVICES Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) - photovoltaic cell: design, working and its importance Non-conventional energy sources: (i) Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introductionschematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction- Design and workingmovement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels Fuel cells:- Introduction - cell representation, H2-O2 fuel cell: Design and working, advantages and limitations. Types of fuel cells: Alkaline fuel cell methanol-oxygen - phosphoric acid fuel cells - molten carbonate fuel cells.

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title	T	
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, ls, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors –Turbo, vi, Emacs 1.2) C Program to Perform Addition, Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise – 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise – 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario – 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the ATM and Net banking for which OTP was sent to his registered mobile number. Using this OTP number he has

	to generate ATM PIN number. After
	generating PIN number, he can use it for
	further transactions. Maximum login he
	can make is 3 times.
- 1	Sample Input:
	OTP: 6732
*	If valid
	Enter PIN: 8858
	Confirm your PIN: 8858
	Sample output:
	valid/Invalid
	PIN generated successfully. Note: OTP is hard coded.
	3.4) Scenario - 2 RESET PASSWORD:
	Sindhuja was using Syndicate Bank's Online Account. She wanted to pay her
	bills through Online. But she forget her
	password. Now she has to reset the
*	password. For resetting the password,
	she has to select reset option from the
	Menu.
	NOTE: using switch case.
	Sample input:
	1. Fast withdrawal
	2. Mini Statement.
	3. Balance Enquiry
	4. Reset Password
	Enter your choice: 4
	Sample Output: Reset password: New
	password: ***** Confirm password:

	D • • •
Exercise – 4 Control Flow - II	Exercise -4:
a) Write a C Program to Find Whether	
the Given Number is	4.1) Write a C Program to Find Whether the Given Number is
i) Prime Number	i) Prime Number
ii) Armstrong Numberb) Write a C program to print Floyd	ii) Armstrong Number
Triangle	4.2) Write a C program to print Floyd
c) Write a C Program to print Pascal	Triangle
Triangle	4.3) Write a C Program to print Pascal
	Triangle
Exercise – 5 Functions	Exercise – 5:
a) Write a C Program demonstrating	Control Flow – III
of parameter passing in Functions and	5.1) Write a C program to find the sum
•	

b) Write a C Program illustrating 5.2) Write a C program to check Fibonacci, Factorial with Recursion whether given number is palindrome or without Recursion. 5.3) Write a C program to read two numbers, x and n, and then compute the sum of the geometric progression 1+x+x2+x3+....+xn. 5.4) Scenario - 3 Student Attendance report Generation: Some of the school staff had failed to maintain the attendance of the students. causing lack of essential records related to students attendance that should be submitted in a parents meet. The school management has decided to automate the process in order to maintain the attendance of every student effectively. You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not. Exercise - 6 Control Flow - III Exercise 6: a) Write a C Program to make a Arrays Demonstration of arrays simple Calculator to Add, Subtract, Multiply or Divide Using 6.1) Linear Search. switch...case 6.2) Bubble Sort. b) Write a C Program to convert 6.3) Operations on Matrix. decimal to binary and hex (using 6.4) Scenario - 4 Celebrity of the Week: Red FM has launched a program called switch call function the Celebrity of the week in their channel. function) Listeners are given a toll free number where they can listen to list of celebrities. Listeners can choose their favourite celebrity from the list and vote for him/her. The votes are validated from Monday to Saturday. The one with highest votes is called as "Celebrity of the Week" and his/her songs are played in the program, which is aired on Sundays. Now write a program to find the celebrity of the week. Exercise - 7 Functions - Continued Exercise - 7: Write a C Program to compute the Functions 7.1) Write a C Program to demonstrate values of sin x and cos x and e^x values using Series parameter passing in Functions and

returning values.

of individual digits of a positive integer.

ex	pansion. (use factorial function)	returning values. 7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario – 5 SELF DRIVE RENTAL Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT, In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km. In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km. In XL, 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
a) b)	ercise – 8 Arrays emonstration of arrays Search-Linear. Sorting-Bubble, Selection. Operations on Matrix.	Exercise – 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario – 6 Word with

Exercises - 9 Structures	Obesity: Jeeth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
a)Write a C Program to Store Information of a Movie Using Structure b)Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	Exercise – 9: Arrays and Pointers 9.1) Write a C Program to Access Elements of an Array Using Pointer 9.2) Write a C Program to find the sum of numbers with arrays and pointers.
Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	Exercise – 10: Dynamic Memory Allocations 10.1) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc () function. 10.2) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function. Understand the difference between the above two programs
Exercise – 11 Dynamic Memory Allocations a) Write a C program to find sum of n elements entered by user. To perform this program,	Exercises – 11: Structures: 11.1) Write a C Program to Store Information of a book Using Structure 11.2) Write a C Program to Store

allocate memory dynamically using malloc () function.

 b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date = 5

Late fee per day = Rs. 50 Fine paid by the student is 5 * 50 = 250.

Exercise - 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

- Add New Student
- 2. Update Existing Student

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Students
perform:
4. Retrieve
nt details:
1
tails added

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English -I	English-II
Course Code	R161101	171HS2T03
	UNIT I: 1. 'Human Resources' from English for Engineers and Technologists. 2. 'An Ideal Family' from Panorama: A Course on Reading	UNIT-I: I. TECHNOLOGY WITH A HUMAN FACE (Detailed) 2. AN IDEAL FAMILY (Non-Detailed)
	UNIT 2: 1. ' Transport: Problems and Solutions' from English for Engineers and Technologists. 2. 'War' from 'Panorama : A Course on Reading'	UNIT-II: I. CLIMATE CHANGE AND HUMAN STRATEGY (Detailed) 2. WAR (Non-Detailed)
	UNIT 3: 1. 'Evaluating Technology' from English for Engineers and Technologists. 2. 'The Verger' from 'Panorama : A Course on Reading	UNIT-III: 1. EMERGING TECHNOLOGIES (Detailed) 2. THE VERGER (Non-Detailed)
	UNIT 4: 1. 'Alternative Sources of Energy' from English for Engineers and Technologists. 2. ' The Scarecrow' from Panorama: A	UNIT-IV: I. THE SECRET OF WORK (Detailed) 2. THE SCARECROW (Non-Detailed)
Syllabus	Course on Reading UNIT 5: 1. 'Our Living Environment' from English for Engineers and Technologists. 2. 'A Village Host to Nation' from Panorama: A Course on Reading	UNIT-V: 1. WORK BRINGS SOLACE (Detailed) 2. A VILLAGE LOST TO THE NATION (Non-Detailed)
	UNIT 6: 1. 'Safety and Training' from English for Engineers and Technologists. 2. 'Martin Luther King and Africa' from Panorama: A Course on Reading	

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Regulation	Pre-Revision	Post-Revision
Course	Mathematics-III .	Mathematics-III
Title		
Course Code	R161203	171BS2T06
Syllabus	UNIT I: Linear systems of equations: Rank-Echelon form-Normal form – Solution of linear systems – Gauss elimination - Gauss Jordon- Gauss Jacobi and Gauss Seidal methods. Applications: Finding the current in electrical circuits. UNIT II: Eigen values - Eigen vectors and	UNIT - I: Laplace transforms: Laplace transforms of standard functions-First Shifting theorem, Change of scale, Multiplication with t, Division by t - Transforms of derivatives and integrals – Unit step function –Dirac's delta function, Periodic functions. UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen vectors- Properties - Cayley-Hamilton theorem - Inverse and powers of a matrix by using Cayley-Hamilton theorem-Diagonalization- Quadratic forms-Reduction of quadratic form to canonical form - Rank - Positive, negative and semi definite - Index - Signature. Applications: Free vibration of a two-mass system. UNIT III: Multiple integrals: Curve tracing: Cartesian, Polar and Parametric forms. Multiple integrals: Double and triple integrals - Change of variables - Change of order of integration. Applications: Finding Areas and Volumes. UNIT IV: Special functions: Beta and Gamma functions- Properties - Relation between Beta and Gamma functions. Evaluation of improper integrals. Applications: Evaluation of integrals. UNIT V: Vector Differentiation: Gradient-Divergence- Curl - Laplacian and second order operators -Vector identities.	Inverse Laplace transforms – Convolution theorem (without proof), Second shifting theorem. *(MATLAB Exercise: Computing Laplace transform off (t) using symbolic toolbox, Solving initial value problems using 'dsolve') Applications: Evaluating improper integrals, solving initial value problems using Laplace transforms. UNIT - III: Multiple integrals and Beta, Gamma functions: Multiple integrals: Double and triple integrals – Change of variables – Change of order of integration, Beta and Gamma functions- Properties – Relation between Beta and Gamma functions Applications: Finding Areas and Volumes. UNIT - IV: Vector Differentiation: Gradient – Directional Derivatives - Divergence- Curl – Laplacian operator - Vector identities. Applications: Equation of continuity, potential surfaces UNIT - V: Vector Integration: Line integral – Work done - Surface and volume integrals, Green's Theorem, Stokes Theorem and

	Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
A STATE OF THE STA	UNIT VI: Vector Integration: Line integral - Work done - Potential function - Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Applied Physics	Applied Physics ·
Title		
Course	R161207	171BS1T04/171BS2T04
Code		
	UNIT-I INTERFERENCE: Principle of	UNIT-I: Interference: Principle of
	Superposition – Coherent Sources –	Superposition – Coherence– Interference in
	Interference in thin films (reflection	thin films (reflection geometry) - Newton's
	geometry) – Newton's rings –	rings – construction and working principle
	construction and basic principle of	of Interferometer.
	Interferometers.	
	UNIT-II DIFFRACTION: Fraunhofer	UNIT-II: Diffraction: Fraunhofer diffraction
Syllabus	diffraction at single slit - Cases of double	at single slit – Cases of double slit, N-slits, &
•	slit, N-slits & Circular Aperture	circular aperture, grating equation –
	(Qualitative treatment only)-Grating	Rayleigh criterion of resolving power-
	equation - Resolving power of a grating,	Resolving power of a grating, Telescope
	Telescope and Microscopes.	and Microscopes
	UNIT-III POLARIZATION: Types of	UNIT-III: Polarization: Types of Polarization
	Polarization - Methods of production -	- Methods of production - Nicol Prism -
	Nicol Prism -Quarter wave plate and Half	Quarter wave plate and Half Wave plate-
	Wave plate - Working principle of	working principle of polarimeter
	Polarimeter (Sacharimeter). LASERS:	(Sacharimeter). LASERS: Characteristics-
	Characteristics – Stimulated emission –	Stimulated emission – Einstein's Transition
	Einstein's Transition Probabilities	ProbabilitiesPumping schemes- Ruby laser
	Pumping schemes - Ruby laser - Helium	– Helium Neon laser-CO2 Laser-
	Neon laser.	Applications
	UNIT-IV ELECTROMAGNETIC FIELDS:	UNIT-IV: Quantum Mechanics: Introduction
	Scalar and Vector Fields – Electric	–Matter waves – Schrödinger Time
	Potential- Gradient, Divergence of fields –	Independent and Time Dependent wave
	Gauss and Stokes theorems-Propagation	equations – Particle in a box. FREE
	of EM waves through dielectric medium.	ELECTRON THEORY: Defects of classical free
		electron theory –Quantum Free electron
		theory – concept of Fermi Energy
	UNIT-V QUANTUM MECHANICS:	UNIT-V: Band Theory of Solids: Bloch's
	Introduction - Matter waves -	theorem (qualitative) – Kronig – Penney
	Schröedinger Time Independent and	model (Qualitative) – energy bands in
	Time Dependent wave equations -	crystalline solids – classification of
	Particle in a box. FREE ELECTRON	crystalline solids – effective mass of

THEORY: Defects of Classical free electron theory –Quantum Free electron theory - concept of Fermi Energy.	electron & concept of hole. Semiconductor Physics: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation- Hall effect in semiconductors. –
UNIT-VI BAND THEORY OF SOLIDS: Bloch's theorem (qualitative) – Kronig – Penney model – energy bands in crystalline solids – classification of crystalline solids – effective mass of electron & concept of hole. SEMICONDUCTOR PHYSICS: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation-Hall effect in semiconductors	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Department of Electrical and Electronics Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision	
Course Title	Electrical Machines-I	Electrical Machines-I	
Course Code	RT21026	R1621022	
	UNIT-I: Electromechanical Energy Conversion: Introduction to S.I Units - principles of electromechanical energy conversion – forces and torque in magnetic field systems – energy balance- singly excited machine- magnetic force - co-energy – multi excited magnetic field system- construction features of conventional and modern DC machines.	UNIT-I: Electromechanical Energy Conversion and introduction to DC machines: Principles of electromechanical energy conversion – singly excited and multi excited system – Calculation of force and torque using the concept of co-energy. Construction and principle of operation of DC machine – EMF equation for generator – Classification of DC machines based on excitation – OCC of	
Syllabus	UNIT-II: D.C. Generators – I Principle of operation – E.M.F equation- armature windings – lap and wave windings – armature reaction – cross magnetizing and de-magnetizing AT/pole –commutation process – methods of improving commutation – compensating windings – Interpoles.	DC shunt generator. UNIT-II: Performance of D.C. Machines Torque and back-emf equations of dc motors— Armature reaction and commutation— characteristics of separately-excited, shunt, series and compound motors—losses and efficiency—applications of dc motors.	
Synabus	UNIT III: DC Generators -II: Methods of excitation-Self excited and separately excited-types of generators build-up of emf-open circuit	UNIT-III: Starting, Speed Control and Testing of D.C. Machines Necessity of starter – Starting by 3 point and 4-point starters – Speed control by	
	characteristics-critical field resistance- critical speed-causes for failure to self- excitation-remedial measures-Internal and external characteristics of separately excited, shunt, series, compound generators-applications,	armature voltage and field control – testing of DC machines - brake test, Swinburne's method – principle of regenerative or Hopkinson's method - retardation test separation of losses.	
	losses and efficiency. UNIT-IV: D.C. Motors Principle of operation – back E.M.F - torque equation –characteristics of shunt, series and compound motors –	UNIT-IV: Single-phase Transformers Types and constructional details principle of operation - emf equation	

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armature reaction and commutation losses and efficiency- speed torque characteristics-applications

Starting by 3 point and 4 point starters protective devices.

UNIT-V: Speed Control and Testing of D.C. Machines: Speed control by armature voltage and field flux control - testing of DC machines - brake test, Swinburne's method - principle of regenerative or Hopkinson's method retardation test -- separation of losses - methods of electrical braking: plugging, dynamic and regenerative.

UNIT-VI: Design of D.C. Machines Design concept - output equation choice of specific electric and magnetic loadings - separation of D and L - estimation of number of conductors/ turns - coils - armature slots - conductor dimension - slot dimension - choice of number of poles length of air gap.

lagging, leading and unity power factors loads - phasor diagrams of transformers equivalent circuit – regulation – losses and efficiency - effect of variation of frequency and supply voltage on losses All day efficiency.

UNIT-V Single-phase Transformers Testing: Tests on single phase transformers - open circuit and short circuit tests - Sumpner's test separation of losses - parallel operation with equal voltage ratios - auto transformer - equivalent circuit comparison with two winding transformers.

UNIT-VI 3-Phase Transformers

Polyphase connections - Y/Y, Y/Δ , Δ/Y , Δ/Δ and open Δ -- Third harmonics in three winding phase voltages transformers: determination of Zp, Zs and Zt -- transients in switching - off load and on load tap changers -- Scott connection

Course Coordinator

Head of the Department

Head of The Department Dept: Of Electrical & Electronics Engineering Aditya Engineering College (A9)



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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Electrical Machines-II	Electrical Machines-II
Course Code	RT22025	R1622022
Syllabus	UNIT-I Single-phase Transformers Types and constructional details - principle of operation - emf equation - operation on no load and on load - lagging, leading and unity power factors loads - phasor diagrams of transformers - equivalent circuit - regulation - losses and efficiency - effect of variation of frequency and supply voltage on losses - All day efficiency. UNIT-II Single-phase Transformers Testing: Tests on single phase transformers - open circuit and short circuit tests - Sumpner's test - separation of losses - parallel operation with equal voltage ratios - auto transformer - equivalent circuit - comparison with two winding transformers	UNIT-I 3-phase Induction Motors Construction details of cage and wound rotor machines - production of rotating magnetic field - principle of operation - rotor emf and rotor frequency - rotor current and pf at standstill and during running conditions - rotor power input, rotor copper loss and mechanical power developed and their interrelationship - equivalent circuit - phasor diagram UNIT-II Characteristics, starting and testing methods of Induction Motors Torque equation - expressions for maximum torque and starting torque - torque slip characteristic - double cage and deep bar rotors - crawling and cogging - speed control of induction motor with V/f method - no load and blocked rotor tests - circle diagram for predetermination of performance—methods of starting - starting current and torque calculations - induction generator operation (Qualitative treatment only)
	UNIT-III 3-Phase Transformers Polyphase connections - Y/Y, Y/Δ,	UNIT - III: Single Phase Motors Single phase induction motors -
S	Δ/Y, Δ/Δ and open Δ Third harmonics in phase voltages - three winding transformers: determination of Zp, Zs and Zt transients in	Constructional features and equivalent circuit Problem of starting—Double revolving field theory—Starting methods, shaded pole motors, AC Series motor.
	switching - off load and on load tap changers Scott connection. UNIT-IV 3- phase Induction	UNIT-IV: Construction, Operation
	Motors	and Voltage Regulation of

construction details of cage and wound rotor machines - production of a rotating magnetic field - principle of operation - rotor emf and rotor frequency - rotor current and pf at standstill and during running conditions - rotor power input, rotor copper loss and mechanical power developed and their inter relationship - equivalent circuit - phasor diagram.

Synchronous generator Constructional features of non-salient and salient pole type – Armature windings – Distributed concentrated windings Distribution- Pitch and winding factors -E.M.F equation-Improvements and armature waveform reaction-Voltage regulation synchronous impedance method-Potier triangle MMFmethod and method-Phasor diagrams- Two reaction analysis of salient pole machines and phasor diagram.

Characteristics, starting and testing methods of Induction Torque Motors: equation expressions for maximum torque and torque torque starting characteristic - double cage and deep bar rotors - crawling and cogging - no load and blocked rotor tests - circle diagram for predetermination of performance - methods of starting and torque starting current calculations - induction generator operation.

UNIT -V: Parallel operation of synchronous generators: Parallel operation with infinite bus and other alternators - Synchronizing power - Load sharing - Control of real and reactive power- Numerical problems.

UNIT-VI Design of transformer and 3-phase induction motor

Transformer: Design concept – output equation – choice of windings – calculation of number of turns – length of mean turn of winding - calculation of resistance and leakage reactance.

Three phase induction motor: Design concept – choice of specific electric and magnetic loadings – output equation – stator design – number of slots – conductor dimensions – type of winding – number of rotor slots – conductor dimensions.

UNIT-VI: Synchronous motor – operation, starting and performance
Synchronous Motor principle and theory of operation—Phasor diagram — Starting torque—Variation of current and power factor with excitation —Synchronous condenser — Mathematical analysis for power developed— Hunting and its suppression — Methods of starting — Applications.

Course Coordinator

Head of the Department

Head of The Department
Dept: Of Electrical & Electronics Engineering
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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Electrical Machines -I Laboratory	Electrical Machines -I Laboratory
Course Code	RT22027	R1622027
	1.Magnetization characteristics of DC shunt generator. Determination of critical field resistance and critical speed.	1. Magnetization characteristics of DC shunt generator. Determination of critical field resistance and critical speed.
	2.Load test on DC shunt generator. Determination of characteristics.	2.Brake test on DC shunt motor. Determination of performance curves.
	3.Brake test on DC shunt motor. Determination of performance curves.	3. Hopkinson's test on DC shunt machines. Predetermination of efficiency.
	4.Load test on DC compound generator. Determination of characteristics.	4.Swinburne's test and Predetermination of efficiencies as Generator and Motor
	5.Hopkinson's test on DC shunt machines. Predetermination of efficiency.	5.Speed control of DC shunt motor by Field and armature Control.
	6.Fields test on DC series machines. Determination of efficiency.	6.Retardation test on DC shunt motor. Determination of losses at rated speed
Syllabus	7.Swinburne's test and Predetermination of efficiencies as Generator and Motor.	7. Separation of losses in DC shunts motor.
	8.Speed control of DC shunt motor by Field and armature Control.	8.OC & SC test on single phase transformer.
	9.Brake test on DC compound motor. Determination of performance curves.	9.Sumpner's test on single phase transformer
	10.Load test on DC series generator. Determination of characteristics	10.Scott connection of transformers
	11.Retardation test on DC shunt motor. Determination of losses at rated speed.	11.Parallel operation of Single-phase Transformers
	12. Separation of losses in DC shunt motor.	12.Separation of core losses of a single- phase transformer

	13. Heat run test on a bank of 3 Nos. of
	single-phase Delta connected
시기에서 김렇게 된 집에 들어가는 없이 되는 모든	transformers

Course Coordinator

Head of the Department

Head of the Department
Dept: Of Electrical & Electronics Engineering
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Department of Mechanical Engineering

Syllabus revision Index (2017-18)

S.No	Name of the course	Percentage of syllabus change
1	English-I	65
2	Mathematics-I	40
3	Environmental Studies	25
4	Engineering Chemistry	25
5	Engineering Chemistry Lab	20
6	Computer Programming Lab	40
7	English-II	55
8	Mathematics-III	40
9	English Communication Skills Lab-II	40

Program Coordinator

Head of the Department

Head of the Department Department of Mechanical Engineering Aditya Engineering College (A) SURAMPALEM-533 437



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	• English-II	English-I ·
Title		
Course	R161201	171HS1T01
Code	9	
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW-
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	Control Contro
	Indian Scientists.	и н
*	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	,
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
1200	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. 'The Chief Software Architect'	
	from English Encounters	
	2. 'Srinivasa Ramanujan' from The Great	
	Indian Scientists.	
	maian scientists.	L

Signature of the course coordinator

Signature of the HOD

Head of the Department Department of H & a Aditya Engineering College



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	° Mathematics-I	Mathematics-I .
Title		
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
Syllabus	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equations Equations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax V(x), xV(x)-
	V(x), xV(x)- Method of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
		Problems using the command 'dsolve')
		Applications: Electric circuits, simple
		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
	theorems - Transforms of derivatives and	Solution of linear systems – Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method.
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms- Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	
	differential equations (initial value	
	problems) using Laplace transforms. UNIT IV: Partial differentiation:	LINUT IV: Figor values Figor vectors and
		UNIT IV: Eigen values - Eigen vectors and
	Introduction- Homogeneous function- Euler's theorem-Total derivative-Chain	Quadratic forms: Eigen values - Eigen
	ruleGeneralized Mean value theorem for	vectors – Properties of eigen values
	Tule Generalized Mean value theorem for	(without proof) – Cayley -Hamilton

	single variable (without proof)-Taylor's	theorem (without proof) Invesce and
		theorem (without proof) - Inverse and
	and Mc Laurent's series expansion of	powers of a matrix by using Cayley -
	functions of two variables— Functional	Hamilton theorem- Diagonalization-
Y.	dependence- Jacobian. Applications:	Quadratic forms- Reduction of quadratic
	Maxima and Minima of functions of two	form to canonical form using orthogonal
	variables without constraints and	transformation – Nature of the quadratic
	Lagrange's method (with constraints).	form. *(MATLAB Exercise: All Basic
	×	Operations on matrices are to be
		implemented using MATLAB including
		computation of rank, computation of eigen
		values and eigen vectors) .
	UNIT V: First order Partial differential	UNIT V: Partial differentiation and Partial
	equations: Formation of partial	differential equations: Homogeneous
	differential equations by elimination of	function-Euler's theorem-Total derivative-
	arbitrary constants and arbitrary	Chain rule-Taylor's and Maclaurin's series
	functions –solutions of first order linear	expansion of functions of two variables-
	(Lagrange) equation and nonlinear	Functional dependence Jacobian.
	(standard types) equations.	Formation of partial differential equations
	(4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	by elimination of arbitrary constants and
		arbitrary functions –solutions of first order
		linear (Lagrange) equation, nonlinear
		(standard types) equations. Applications:
		Maxima and Minima of functions of two
		variables without constraints and
	(1)	Lagrange's method (with constraints).
		*(MATLAB Exercise: To Plot graphs of
		various single and multivariable functions
		using MATLAB and analyze their maxima and minima graphically).
	UNIT VI: Higher order Partial differential	0-1
	equations: Solutions of Linear Partial	
	differential equations with constant	
	coefficients. RHS term of the type	
	e^(ax+by), sin(ax+by), cos(ax+by), x^m	
	y^n Classification of second order partial	
	differential equation	

G - V . Russe Coordinator

10%

Signature of the HOD

Head of the Department

Department of H & RC

Aditya Engineering College (45)



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Department of Humanities & Basic Sciences

Course Title Course Code UNIT — I Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance —Sustainability: Stockholm and Rio Summit—Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. — Food chains, food webs and ecological pyramids. — Environmental Studies 171HS1T02/171HS2T02 UNIT —I: Ecosystems: Scope of environmental studies, Structure- Producers, consumers and decompose Function — Food chain, Food web, Tro structure and Energy flow in the ecosystem regulation. Ecological succession — Food chains, food webs and ecological pyramids. —	opic ystem ig,
Code UNIT — I Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance —Sustainability: Stockholm and Rio Summit—Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers. - Energy flow in the ecosystem - Ecological succession. — Food chains, food	opic ystem ig,
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Syllabus and Importance —Sustainability: Stockholm and Rio Summit—Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. — Food chains, food	opic ystem ig,
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Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession Food chains, food	ystem g,
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Syllabus Population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession Food chains, food Ecosystem regulation. Ecological succession. Ecological succession. Ecosystem regulation. Ecological succession. Ecosystem regulation. Ecological succession. Ecosystem regulation. Ecological succession. Ecosystem and aquatic ecosystem - Introduction, types, characteristic features.	
Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. – Food chains, food	
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Producers, consumers and decomposers. - Energy flow in the ecosystem - Ecological succession. – Food chains, food	
- Energy flow in the ecosystem - Ecological succession. – Food chains, food	
Ecological succession. – Food chains, food	
webs and ecological pyramids	
Introduction, types, characteristic ·	
features, structure and function of Forest	
ecosystem, Grassland ecosystem, Desert	
ecosystem, Aquatic ecosystems.	
UNIT - II Natural Resources: Natural UNIT - II: Natural Resources: Natural	
resources and associated problems resources and associated problems F	orest
Forest resources – Use and over – resources – Use and over – exploitati	on,
exploitation, deforestation – Timber deforestation – Timber extraction – N	Mining,
extraction - Mining, dams and other dams and other effects on forest and	tribal
effects on forest and tribal people Water people Water resources – Use and or	/er
resources - Use and over utilization of utilization of surface and ground wat	er –
surface and ground water - Floods, Floods, drought, conflicts over water	
drought, conflicts over water, dams benefits and problems Mineral reso	, dams
benefits and problems Mineral resources: Use and exploitation, environmental	
Use and exploitation, environmental of extracting and using mineral resou	ources:

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems. water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land Wasteland reclamation, degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT III Biodiversity conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India biodiversity: Conservation of conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: effects Sources, Classification, control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection -Forest Act Conservation Act-Issues involved in enforcement of environmental legislation. -Public awareness.

of people; its problems and concerns.
Global challenges Environmental ethics:
Issues and possible solutions.
Environmental Protection Act - Air
(Prevention and Control of Pollution) Act. –
Water (Prevention and control of Pollution)
Act -Wildlife Protection Act - Forest
Conservation Act-Issues involved in
enforcement of environmental legislation. Public awareness and Environmental
management.

UNIT – VI Environmental Management:
Impact Assessment and its significance
various stages of EIA, preparation of EMP
and EIS, Environmental audit.
Ecotourism, Green Campus – Green
business and Green politics.
The student should Visit an Industry /

The student should Visit an Industry / Ecosystem and submit a report individually on any issues related to Environmental Studies course and make a power point presentation.

Signature of the course coordinator

To/

Signature of the HOD

Head of the Department
Department of H & BS
Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Engineering Chemistry	Engineering Chemistry
Title	3	
Course	R161105	171BS1T03
Code		
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT- I: High Polymers and Plastics:
	Polymerisation:- Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
	regular polymers – methods of	- Physical and mechanical properties -
Syllabus	polymerization (emulsion and	Plastics as engineering materials:
	suspension) -Physical and mechanical	advantages and limitations -
	properties - Plastics as engineering	Thermoplastics and Thermosetting plastics
	materials : advantages and limitations -	 Compounding and fabrication
	Thermoplastics and Thermosetting	(compression moulding, injection
	plastics - Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques) - Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers :- Natural rubber-	Elastomers - Natural rubber- compounding
	compounding and vulcanization -	and vulcanization - Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol - Applications of
	Thiokol and polyurethanes - Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	200
	Fiber reinforced plastics - Biodegradable	
	polymers – Conducting polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels -	UNIT - II: Fuel Technology: Fuels:-
	Introduction - Classification - Calorific	Introduction - Classification - Calorific
	value - HCV and LCV - Dulong's formula -	value - HCV and LCV - Dulong's formula -
	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis –
	- Coal — Proximate and ultimate analysis	Significance of the analyses - Liquid fuels -
	- Significance of the analyses - Liquid	Petroleum- Refining - Cracking - Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol -Petrol knocking - Diesel knocking -
	Synthetic petrol –Petrol knocking – Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents – Power alcohol – Bio-diesel –
	Anti-knock agents - Power alcohol - Bio-	Gaseous fuels - Natural gas. LPG and CNG -
	diesel – Gaseous fuels – Natural gas, LPG	Combustion - Calculation of air for the

and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Rocket fuels

combustion of a fuel – Flue gas analysis – Orsat apparatus.

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion :-Definition - Theories of Corrosion (chemical & electrochemical) - Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT - III: Electrochemical Cells and Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) -Formation of galvanic cells by different by metals, concentration cells. differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Super conductors:-Type –I, Type II – Characteristics and applications Green synthesis:- Principles - 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction —
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors:-Type —
I, Type II — Characteristics and applications
Semi conductors: - Preparation of
semiconductors, working of diodes and
transistors. Green synthesis:-Principles
Liquid crystals:-Introduction — Types —
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: WATER TECHNOLOGY Hard water:- Reasons for hardness — units of hardness - determination of hardness and alkalinity - Water for steam generation - Boiler troubles — Priming and

UNIT - V: Water Technology Hard water:-Reasons for hardness – units of hardness determination of hardness andalkalinity -Water for steam generation - Boiler troubles – Priming and Foaming, Scale

Foaming, Scale formation, Boiler corrosion, Caustic embrittlement Internal treatments - Softening of Hard water : Lime - Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes-Purification Sterilization disinfection: Chlorination, Break point chlorination and other methods -Reverse Osmosis and Electro Dialysis.

formation, Boiler corrosion, Caustic embrittlement - Internal treatments - Softening of Hard water: Lime – Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes - Purification – Sterilization and disinfection: Chlorination, Break point chlorination and other methods – Reverse Osmosis and Electro Dialysis.

UNIT VI: CHEMISTRY OF ENGINEERING MATERIALS AND FUEL CELLS Refractories:
- Definition, characteristics, classification, properties, failure of refractories Lubricants: - Definition, function, Theory and mechanism of lubricants, properties (Definition and importance) Cement: - Constituents, manufacturing, hardening and setting, deterioration of cement Insulators: - Thermal and electrical insulators Fuel cells: - Hydrogen Oxygen fuel cells - Methanol Oxygen fuel cells

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Department of H & BS

Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	· Engineering/Applied Chemistry Lab	Engineering Chemistry Lab °
Title		F Local
Course	R161227/ R161118	171BS1L01
Code		
	1. Introduction to Chemistry laboratory –	Exercise 1: Introduction to Chemistry
	Molarity, Normality, Primary, secondary	laboratory – Molarity, Normality, Primary,
	standard solutions, Volumetric titrations,	secondary standard solutions, Volumetric
	Quantitative analysis, Qualitative	titrations, Quantitative analysis, Qualitative
	analysis, etc	analysis, etc.
	2. Trial experiment - Determination of	Exercise 2: Trial experiment -
	HCl using standard Na2CO3 solution	Determination of HCl using standard
Cullabus		Na2CO3 solution.
Syllabus	3. Determination of alkalinity of a sample	Exercise 3: Preparation of Phenol -
	containing Na2CO3 and NaOH.	Formaldehyde resin (Bakelite).
	4. Determination of KMnO4 using	Exercise 4: Determination of KMnO4 using
	standard Oxalic acid solution	standard Oxalic acid solution.
ř	5. Determination of Ferrous iron using	Exercise 5: Determination of ferrous iron
	standard K2Cr2O7 solution	using standard K2Cr2O7 solution.
	6. Determination of Copper using	Exercise 6: Preparation of Bio-Diesel.
	standard K2Cr2O7 solution	
	7. Determination of temporary and	Exercise 7: Determination of temporary
	permanent hardness of water using	and permanent hardness of water using
4.	standard EDTA solution.	standard EDTA solution.
	8. Determination of Copper using	Exercise 8: Determination of Copper using
	standard EDTA solution	standard EDTA solution.
	9. Determination of Iron by a	Exercise 9: Determination of Iron by a
	Colorimetric method using thiocynate as	Colorimetric method using thiocynate as
	reagent.	reagent.
	10. Determination of pH of the given	Exercise 10: Determination of pH of the
	sample solution using pH meter.	given sample solution using pH meter.
	11. Conductometric titration between	Exercise 11: Conduct metric titration
	strong acid and strong base.	between strong acid and strong base.
	12. Conductometric titration between	Exercise 12: Conduct metric titration
	strong acid and weak base.	between strong acid and weak base.
	13. Potentiometric titration between	Exercise 13: Potentiometric titration
	strong acid and strong base.	between strong acid and strong base.
	14. Potentiometric titration between	Exercise 14: Potentiometric titration

strong acid and weak base.	between strong acid and weak base.
15. Determination of Zinc using standard EDTA solution.	Exercise 15: Determination of Zinc using standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin - C.

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title	,	
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, ls, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors – Turbo, vi, Emacs 1.2) C Program to Perform Addition, Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise – 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise – 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario – 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the ATM and Net banking for which OTP was sent to his registered mobile number. Using this OTP number he has

	to generate ATM PIN number. After
	generating PIN number, he can use it for
	further transactions. Maximum login he
	can make is 3 times.
	Sample Input:
	OTP: 6732
	If valid
	Enter PIN: 8858
	Confirm your PIN: 8858
1	Sample output:
	valid/Invalid
	PIN generated successfully.
	Note: OTP is hard coded.
	3.4) Scenario - 2 RESET PASSWORD:
	Sindhuja was using Syndicate Bank's
	Online Account. She wanted to pay her
	bills through Online. But she forget her
	password. Now she has to reset the
	password. For resetting the password,
	she has to select reset option from the
	Menu.
4	NOTE: using switch case.
	Sample input:
	1. Fast withdrawal
	2. Mini Statement.
	3. Balance Enquiry
	4. Reset Password
	Enter your choice: 4
	Sample Output: Reset password: New
	password: ***** Confirm password:

Exercise – 4 Control Flow - II	Exercise -4:
a) Write a C Program to Find Whether	Control Flow - II
the Given Number is	4.1) Write a C Program to Find Whether
i) Prime Number	the Given Number is
ii) Armstrong Number	i) Prime Number
b) Write a C program to print Floyd	ii) Armstrong Number
Triangle	4.2) Write a C program to print Floyd
c) Write a C Program to print Pascal	Triangle
Triangle	4.3) Write a C Program to print Pascal
Triang.	Triangle
	3-
Exercise – 5 Functions	Exercise – 5:
a) Write a C Program demonstrating	Control Flow – III
of parameter passing in Functions and	
or parameter passing in randons and	The proposition of the art Sulf

returning values.	of individual digits of a positive integer.
b) Write a C Program illustrating	5.2) Write a C program to check
Fibonacci, Factorial with Recursion	whether given number is palindrome or
without Recursion.	not.
	5.3) Write a C program to read two
	numbers, x and n, and then compute the
	sum of the geometric progression
	$1+x+x^2+x^3++x^n$
	5.4) Scenario - 3 Student Attendance
	report Generation:
	Some of the school staff had failed to
•	maintain the attendance of the students,
	causing lack of essential records related
	to students attendance that should be
	submitted in a parents meet. The school
	management has decided to automate
	the process in order to maintain the
	attendance of every student effectively.
	You are asked to write a program to the
	above scenario and display whether the
	student is allowed to write the Exam or
	not.
Exercise - 6 Control Flow - III	Exercise 6:
a) Write a C Program to make a	Arrays
simple Calculator to Add, Subtract,	Demonstration of arrays
Multiply or Divide Using	6.1) Linear Search.
switchcase	6.2) Bubble Sort.
b) Write a C Program to convert	6.3) Operations on Matrix.
decimal to binary and hex (using	6.4) Scenario – 4 Celebrity of the Week:
switch call function the	Red FM has launched a program called
function)	Celebrity of the week in their channel.
Tunction)	AND A CANADA CONTRACTOR OF THE PROPERTY OF THE
	Listeners are given a toll free number
	where they can listen to list of
	celebrities. Listeners can choose their
	favourite celebrity from the list and vote
	for him/her. The votes are validated
	from Monday to Saturday. The one with
	highest votes is called as "Celebrity of
	the Week" and his/her songs are played
	in the program, which is aired on
	Sundays. Now write a program to find
	the celebrity of the week.
Exercise - 7 Functions - Continued	Exercise – 7:
Write a C Program to compute the	Functions
values of sin x and cos x and e^x	1.00 100 100 100 100 100 100 100 100 100
values using Series	parameter passing in Functions and
 womb	The state of the s

•	expansion. (use factorial function)	returning values. 7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario - 5 SELF DRIVE RENTAL Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT, In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km. In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km.
		exceed 10kmph, then Rs.12 per km. In XL, 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
	Exercise – 8 Arrays Demonstration of arrays a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	Exercise – 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario – 6 Word with

	Obesity:
	Jeeth is a fun loving and active
	boy. He likes to play with words and
	numbers. One day Jeeth and his friends
	attended a seminar, which was
	conducted in his school. The Seminar
	was about "Causes of obesity in children
	and its effects". Jeeth and his friend
	Ram are not interested in listening to the
	seminar, so he thought of giving a
	puzzle to Ram. Jeeth gave some words
	to Ram and wanted him to find the word
	with Obesity. Ram was confused and
	asking your help. Write a program to
	find the weights of the words and
	display the word with highest weight
	(word with obesity).
Exercises - 9 Structures	Exercise – 9:
a)Write a C Program to Store	
Information of a Movie Using	9.1) Write a C Program to Access
Structure	Elements of an Array Using Pointer
b)Write a C Program to Store	9.2) Write a C Program to find the sum
Information Using Structures with	of numbers with arrays and pointers.
Dynamically Memory	
Allocation	
c) Write a C Program to Add Two	<u>u</u>
Complex Numbers by Passing	
Structure to a Function	
Exercise - 10 Arrays and Pointers	Exercise - 10:
a)Write a C Program to Access	Dynamic Memory Allocations
Elements of an Array Using Pointer	10.1) Write a C program to find sum of
b) Write a C Program to find the sum	n elements entered by user. To perform
of numbers with arrays and pointers.	this program, allocate memory
	dynamically using malloc () function.
	10.2)Write a C program to find sum of n
	elements entered by user. To perform
	this program, allocate memory
	dynamically using calloc () function.
	Understand the difference between the
	above two programs
Exercise - 11 Dynamic Memory	Exercises – 11:
Allocations	Structures:
a) Write a C program to find sum of n	11.1) Write a C Program to Store
elements entered by user. To perform	Information of a book Using Structure
this program,	11.2) Write a C Program to Store

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs

Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date =

Late fee per day = Rs. 50 Fine paid by the student is 5 * 50 = 250.

Exercise - 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

- 1. Add New Student
- 2. Update Existing Student

		3. Delete Existing Student 4. Retrieve A Particular/All Students Sample Input: Choose the task you want to perform: 1. Add 2. Update 3. Delete 4. Retrieve Your choice: 1 Enter student details: Name: Akhil Age: 5 Class: 1 Sample Output: Student details added
	Exercise -13 Files	
	a)Write a C programming code to	
	open a file and to print it contents on	3
	screen.	
	b)Write a C program to copy files	
	Exercise - 14 Files Continued	
	a) Write a C program merges two files	
	and stores their contents in another	
-	file.	7)
	b) Write a C program to delete a file.	
	Exercise – 15 a) System Assembling, Disassembling and identification of Parts / Peripherals. b) Operating System Installation-Install Operating Systems like Windows, Linux along with necessaryDevice Drivers.	
	Exercise – 16	
	a) MS-Office / Open Office i) Word - Formatting, Page Borders, Reviewing, Equations, symbols. ii) SpreadSheet - organize data, usage of formula, graphs, charts. iii) Powerpoint - features of power point, guidelines for preparing an	
	effectivepresentation. b) Network Configuration & Software Installation-Configuring TCP/IP, Proxy, and firewallsettings. Installing application software, system software & tools.	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English -I	English-II
Course Code	R161101	171HS2T03
,	UNIT I: 1. 'Human Resources' from English for Engineers and Technologists. 2. 'An Ideal Family' from Panorama: A Course on Reading	UNIT-I: 1. TECHNOLOGY WITH A HUMAN FACE (Detailed) 2. AN IDEAL FAMILY (Non-Detailed)
	UNIT 2: 1. ' Transport: Problems and Solutions' from English for Engineers and Technologists. 2: 'War' from 'Panorama : A Course on Reading'	UNIT-II: 1. CLIMATE CHANGE AND HUMAN STRATEGY (Detailed) 2. WAR (Non-Detailed)
	UNIT 3: 1. 'Evaluating Technology' from English for Engineers and Technologists. 2. 'The Verger' from 'Panorama : A Course on Reading	UNIT-III: 1. EMERGING TECHNOLOGIES (Detailed) 2. THE VERGER (Non-Detailed)
	UNIT 4: 1. 'Alternative Sources of Energy' from English for Engineers and Technologists. 2. ' The Scarecrow' from Panorama : A Course on Reading	UNIT-IV: 1. THE SECRET OF WORK (Detailed) 2. THE SCARECROW (Non-Detailed)
Syllabus	UNIT 5: 1. 'Our Living Environment' from English for Engineers and Technologists. 2. 'A Village Host to Nation' from Panorama: A Course on Reading	UNIT-V: 1. WORK BRINGS SOLACE (Detailed) 2. A VILLAGE LOST TO THE NATION (Non-Detailed)
	UNIT 6: 1. 'Safety and Training' from English for Engineers and Technologists. 2. 'Martin Luther King and Africa' from Panorama: A Course on Reading	

Signature of the course coordinator

Signature of the HOD Head of the Department of H & As Additya Engineering College (As,



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-III .	° Mathematics-III
Title		
Course	R161203	171BS2T06
Code		
	UNIT I: Linear systems of equations:	UNIT - I: Laplace transforms: Laplace
	Rank-Echelon form-Normal form -	transforms of standard functions-First
No.	Solution of linear systems - Gauss	Shifting theorem, Change of scale,
6 11 - 1	elimination - Gauss Jordon- Gauss Jacobi	Multiplication with t, Division by t -
Syllabus	and Gauss Seidal methods. Applications:	Transforms of derivatives and integrals –
	Finding the current in electrical circuits.	Unit step function –Dirac's delta function,
		Periodic functions.
	UNIT II: Eigen values - Eigen vectors and	UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen	Inverse Laplace transforms – Convolution
	vectors- Properties - Cayley-Hamilton	theorem (without proof), Second shifting
	theorem - Inverse and powers of a matrix	theorem. *(MATLAB Exercise: Computing
	by using Cayley-Hamilton theorem-	Laplace transform off (t) using symbolic
	Diagonalization- Quadratic forms-	toolbox, Solving initial value problems using
	Reduction of quadratic form to canonical	'dsolve') Applications: Evaluating improper
	form – Rank - Positive, negative and semi	integrals, solving initial value problems
	definite - Index - Signature. Applications:	using Laplace transforms.
1	Free vibration of a two-mass system.	
	UNIT III: Multiple integrals: Curve tracing:	UNIT - III: Multiple integrals and Beta,
	Cartesian, Polar and Parametric forms.	Gamma functions: Multiple integrals:
	Multiple integrals: Double and triple	Double and triple integrals - Change of
	integrals – Change of variables – Change	variables – Change of order of integration,
	of order of integration. Applications:	Beta and Gamma functions- Properties -
	Finding Areas and Volumes.	Relation between Beta and Gamma
		functions Applications: Finding Areas and
		Volumes.
	UNIT IV: Special functions: Beta and	UNIT - IV: Vector Differentiation: Gradient -
	Gamma functions- Properties - Relation	Directional Derivatives - Divergence- Curl -
	between Beta and Gamma functions.	Laplacian operator - Vector identities.
	Evaluation of improper integrals.	Applications: Equation of continuity,
	Applications: Evaluation of integrals.	potential surfaces
	UNIT V: Vector Differentiation: Gradient-	UNIT - V: Vector Integration: Line integral –
	Divergence- Curl - Laplacian and second	Work done - Surface and volume integrals,
	order operators -Vector identities.	Green's Theorem, Stokes Theorem and
L		

	Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
50	UNIT VI: Vector Integration: Line integral – Work done – Potential function – Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Signature of the HOD

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Department of Electronics and communication Engineering

Syllabus revision Index

2017-18

S.No	Name of the course	Percentage of syllabus change
1	English-I	65%
2	Mathematics – I	40%
3	Mathematics – II	60%
4	Applied Physics	20%
5	Computer Programming Lab	40%
6	English-II	55%
7	Mathematics – III	40%
8	Environmental Studies	20%
9	Applied Chemistry	25%
10	English Communication Skills Lab-II	40%
11	Applied Chemistry Lab	20%
12	Control Systems	40%
13	Management Science	50%

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Head of the Department Department of E.C.E. Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	• English-II	English-I ·
Course Code	R161201	171HS1T01
	UNIT 1: 1. ' The Greatest Resource- Education' from English Encounters 2. ' A P J Abdul Kalam' from The Great	UNIT-I: 1. IN LONDON: M.K.GANDHI (Detailed) 2. G.D. NAIDU (Non-Detailed)
•	Indian Scientists.	,
	UNIT 2: 1. ' A Dilemma' from English Encounters	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ ABDUL KALAM (Detailed)
	'C V Raman' from The Great Indian Scientists.	2. G.R. GOPINATH (Non-Detailed)
	UNIT 3: 1. 'Cultural Shock': Adjustments to new Cultural Environments from	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW
	English Encounters.	J.B.S. HALDANE (Detailed) 2. J.C. BOSE (Non-Detailed)
	'Homi Jehangir Bhabha' from The Great Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English Encounters.	UNIT-IV: 1. MAN'S PERIL-BERTRAND RUSSELL (Detailed)
	'Jagadish Chandra Bose' from The Great Indian Scientists.	2. HOMI JEHANGIR BHABHA (Non-Detailed)
Syllabus	UNIT 5: 1. 'The Health Threats of Climate Change' from English Encounters	UNIT-V: 1. LUCK—MARK TWAIN (Detailed) 2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great Indian Scientists.	
	UNIT 6: 1. 'The Chief Software Architect' from English Encounters	
	Srinivasa Ramanujan' from The Great Indian Scientists.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course Title	Mathematics-I	Mathematics-I
Course Code	R161102	171BS1T01
Syllabus	UNIT I: Differential equations of first order and first degree: Linear-Bernoulli-Exact-Reducible to exact. Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories- Electrical circuits- Chemical reactions. UNIT II: Linear differential equations of higher order: Non-homogeneous equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)- Method of Variation of parameters. Applications: LCR circuit, Simple Harmonic motion.	UNIT I: Differential equations of first order and first degree: Linear differential equations - Bernoulli differential equation - Exact differential equations reducible to exact (Type-1, Type-2, Type-3, Type-4) Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories. UNIT II: Linear differential equations of higher order: Linear differential equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)-Method of Variation of parameters, Method of undetermined coefficients. *(MATLAB Exercise: Introduction to MAT LAB commands and Solution of Initial Value Problems using the command 'dsolve') Applications: Electric circuits, simple harmonic motion.
	UNIT III: Laplace transforms: Laplace transforms of standard functions-Shifting theorems - Transforms of derivatives and integrals — Unit step function —Dirac's delta function—Inverse Laplace transforms— Convolution theorem (with out proof). Applications: Solving ordinary differential equations (initial value problems) using Laplace transforms. UNIT IV: Partial differentiation: Introduction—Homogeneous function—Euler's theorem-Total derivative-Chain ruleGeneralized Mean value theorem for	UNIT III: Linear systems of equations: Rank of a matrix - Echelon form-Normal form — Solution of linear systems — Gauss elimination method - Gauss Seidal method. Applications: Finding the current in electrical circuits. UNIT IV: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen vectors— Properties of eigen values (without proof) — Cayley -Hamilton

single variable (without proof)-Taylor's theorem (without proof) - Inverse and and Mc Laurent's series expansion of powers of a matrix by using Cayley functions of two variables- Functional Hamilton theorem- Diagonalizationdependence- Jacobian. Applications: Quadratic forms- Reduction of quadratic Maxima and Minima of functions of two form to canonical form using orthogonal variables without constraints transformation-Nature of the quadratic Lagrange's method (with constraints). form. *(MATLAB Exercise: All Basic Operations on matrices are to be implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors) UNIT V: First order Partial differential UNIT V: Partial differentiation and Partial equations: Formation of partial differential equations: Homogeneous differential equations by elimination of function-Euler's theorem-Total derivativearbitrary Chain rule-Taylor's and Maclaurin's series arbitrary constants and functions -solutions of first order linear expansion of functions of two variables-(Lagrange) equation and nonlinear Functional dependence Jacobian. (standard types) equations. Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions -solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically). UNIT VI: Higher order Partial differential equations: Solutions of Linear Partial differential equations with constant coefficients. RHS term of the type e^(ax+by), sin(ax+by), cos(ax+by), x^m y^n Classification of second order partial differential equation

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Environmental Studies	Environmental Studies
Title		A 2 4 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
Course	R161108	171HS1T02/171HS2T02
Code		
Syllabus	UNIT – I Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and dimate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. – Food chains, food webs and ecological pyramids Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystems.	UNIT—I: Ecosystems: Scope of environmental studies, Structure-Producers, consumers and decomposers Function—Food chain, Food web, Tropic structure and Energy flow in the ecosystem Ecological pyramids, nutrient recycling, primary and secondary production, ecosystem regulation. Ecological succession Terrestrial ecosystem and aquatic ecosystem—Introduction, types, characteristic features.
	UNIT – II Natural Resources: Natural resources and associated problems Forest resources – Use and over –	UNIT – II: Natural Resources: Natural resources and associated problems Forest resources – Use and over – exploitation,
	exploitation, deforestation - Timber	deforestation - Timber extraction - Mining,
	extraction - Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	people Water resources - Use and over
	resources - Use and over utilization of	utilization of surface and ground water -
	surface and ground water - Floods,	Floods, drought, conflicts over water, dams
	drought, conflicts over water, dams -	- benefits and problems Mineral resources:
	benefits and problems Mineral resources:	Use and exploitation, environmental effects
	Use and exploitation, environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT 111 **Biodiversity** conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use. productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India Conservation of biodiversity: conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT - V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation

rehabilitation of people; its problems and	of people; its problems and concerns.
concerns. Environmental ethics: Issues	Global challenges Environmental ethics:
and possible solutions. Environmental	Issues and possible solutions.
Protection Act -Air (Prevention and	Environmental Protection Act - Air
Control of Pollution) ActWater	(Prevention and Control of Pollution) Act
(Prevention and control of Pollution) Act -	Water (Prevention and control of Pollution)
Wildlife Protection Act -Forest	Act -Wildlife Protection Act - Forest
Conservation Act-Issues involved in	Conservation Act-Issues involved in
enforcement of environmental	enforcement of environmental legislation
legislationPublic awareness.	Public awareness and Environmental
	management.
UNIT - VI Environmental Management:	
Impact Assessment and its significance	•
various stages of EIA, preparation of EMP	-
and EIS, Environmental audit.	
Ecotourism, Green Campus - Green	
business and Green politics.	
The student should Visit an Industry /	, ac
Ecosystem and submit a report	
individually on any issues related to	
Environmental Studies course and make a	
power point presentation.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course Title	Mathematics-II (NMCV)	Mathematics-II (for ECE)
Course Code	R161110	171BS2T02
Syllabus	UNIT I: Solution of Algebraic and Transcendental Equations: Introduction-Bisection method — Method of false position — Iteration method — Newton-Raphson method (One variable and simultaneous Equations). UNIT II: Interpolation: Introduction-Errors in polynomial interpolation — Finite differences— Forward differences—Backward differences — Central differences — Symbolic relations and separation of symbols — Differences of a polynomial-Newton's formulae for interpolation — Interpolation with unequal intervals — Lagrange's interpolation formula	UNIT I: Solution of Algebraic and Transcendental Equations and Interpolation: Introduction- Bisection method – Method of false position – Iteration method – Newton - Raphson method. Errors in polynomial interpolation – Finite differences- Forward differences- Backward differences – Central differences – Relation between operators - Differences of a polynomial-Newton's formulae for interpolation – Interpolation with unequal intervals - Lagrange's interpolation formula. UNIT II: Numerical Integration and solution of Ordinary Differential equations: Trapezoidal rule- Simpson's 1/3rd and 3/8th rule-Solution of ordinary differential equations by Taylor's series-Picard's method of successive approximations- Euler's method, Modified Euler's method – Runge - Kutta method (fourth order).
	UNIT III: Numerical Integration and solution of Ordinary Differential equations: Trapezoidal rule- Simpson's 1/3rd and 3/8th rule-Solution of ordinary differential equations by Taylor's series-Picard's method of successive approximations-Euler's method - Runge-Kutta method (second and fourth order). Unit-IV: Functions of a complex variable	UNIT III: Fourier Series: Fourier series of periodic function - Dirichlet's conditions for Fourier expansion - Functions having points of discontinuities—Change of Interval — Even and odd functions — Half-range series. UNIT IV: Fourier Transforms: Fourier
	Complex function , Real and Imaginary parts of Complex function, Limit,	integral theorem (without proof) - Fourier sine and cosine integrals - sine and cosine

Continuity and Derivative of comp	ex transforms – properties – inverse
function, Cauchy-Riemann equation	
Analytic function, entire function	
singular point, conjugate function, C -	
equations in polar form, Harmo	
functions, Milne-Thomson method	
	, j
Simple applications to flow problems,	HANTAL A N
Unit-V: Series Expansion and Comp	
Integration Line integral of a comp	
function, Cauchy's theorem(o	
statement) , Cauchy's Integral Formu	and the same of th
Absolutely convergent and uniform	
convergent of series of complex terr	
Radius of convergence, Taylor's seri	
Maclaurin's series expansion, Laurer	t's
series.	
Unit-VI: Singularities and Resid	
Theorem Zeros of an analytic function	
Singularity, Isolated singular	ty,
Removable singularity, Essen	tial
singularity, pole of order m, simple po	ile,
Residues, Residue theorem, Calculat	on
of residues, Residue at a pole of order	
Evaluation of real definite integral	als:
Integration around the unit circ	de,
Integration around semi circle, Indent	ing
the contours having poles on the r	eal
axis.	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English -I	English-II
Course Code	R161101	171HS2T03
	UNIT I: 1. 'Human Resources' from English for Engineers and Technologists. 2. 'An Ideal Family' from Panorama: A Course on Reading	UNIT-I: I. TECHNOLOGY WITH A HUMAN FACE (Detailed) 2. AN IDEAL FAMILY (Non-Detailed)
	UNIT 2: 1. ' Transport: Problems and Solutions' from English for Engineers and Technologists. 2: 'War' from 'Panorama : A Course on Reading'	UNIT-II: 1. CLIMATE CHANGE AND HUMAN STRATEGY (Detailed) 2. WAR (Non-Detailed)
	UNIT 3: 1. 'Evaluating Technology' from English for Engineers and Technologists. 2. 'The Verger' from 'Panorama : A Course on Reading	UNIT-III: I. EMERGING TECHNOLOGIES (Detailed) 2. THE VERGER (Non-Detailed)
	UNIT 4: 1. 'Alternative Sources of Energy' from English for Engineers and Technologists.	UNIT-IV: 1. THE SECRET OF WORK (Detailed) 2. THE SCARECROW (Non-Detailed)
Cullabus	The Scarecrow' from Panorama : A Course on Reading	
Syllabus	UNIT 5: 1. 'Our Living Environment' from English for Engineers and Technologists. 2. 'A Village Host to Nation' from Panorama : A Course on Reading	UNIT-V: 1. WORK BRINGS SOLACE (Detailed) 2. A VILLAGE LOST TO THE NATION (Non-Detailed)
	UNIT 6: 1. ' Safety and Training' from English for Engineers and Technologists. 2. 'Martin Luther King and Africa' from Panorama: A Course on Reading	

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Regulation	Pre-Revision	Post-Revision
Course Title	Applied Physics	Applied Physics •
Course Code	R161207	171BS1T04/171BS2T04
	UNIT-I INTERFERENCE: Principle of	UNIT-I: Interference: Principle of
	Superposition - Coherent Sources -	Superposition – Coherence – Interference in
	Interference in thin films (reflection	thin films (reflection geometry) - Newton's
	geometry) – Newton's rings –	rings - construction and working principle
	construction and basic principle of Interferometers.	of Interferometer.
	UNIT-II DIFFRACTION: Fraunhofer	UNIT-II: Diffraction: Fraunhofer diffraction
Syllabus	diffraction at single slit - Cases of double	at single slit - Cases of double slit, N-slits, &
Symaous	slit, N-slits & Circular Aperture	circular aperture, grating equation -
	(Qualitative treatment only)-Grating	Rayleigh criterion of resolving power-
	equation - Resolving power of a grating,	Resolving power of a grating, Telescope
	Telescope and Microscopes.	and Microscopes
	UNIT-III POLARIZATION: Types of	UNIT-III: Polarization: Types of Polarization
	Polarization - Methods of production -	- Methods of production - Nicol Prism -
	Nicol Prism -Quarter wave plate and Half	Quarter wave plate and Half Wave plate-
	Wave plate - Working principle of	working principle of polarimeter
	Polarimeter (Sacharimeter). LASERS:	(Sacharimeter). LASERS: Characteristics-
	Characteristics- Stimulated emission -	Stimulated emission - Einstein's Transition
	Einstein's Transition Probabilities	ProbabilitiesPumping schemes- Ruby laser
	Pumping schemes - Ruby laser - Helium	 Hellum Neon laser-CO2 Laser-
	Neon laser.	Applications
	UNIT-IV ELECTROMAGNETIC FIELDS:	UNIT-IV: Quantum Mechanics: Introduction
	Scalar and Vector Fields – Electric	-Matter waves - Schrödinger Time
	Potential- Gradient, Divergence of fields -	Independent and Time Dependent wave
	Gauss and Stokes theorems-Propagation	equations – Particle in a box. FREE
	of EM waves through dielectric medium.	ELECTRON THEORY: Defects of classical free
		electron theory —Quantum Free electron
		theory – concept of Fermi Energy
	UNIT-V QUANTUM MECHANICS:	UNIT-V: Band Theory of Solids: Bloch's
	Introduction - Matter waves -	theorem (qualitative) - Kronig - Penney
	Schröedinger Time Independent and	model (Qualitative) – energy bands in
	Time Dependent wave equations -	crystalline solids - classification of
	Particle in a box. FREE ELECTRON	crystalline solids- effective mass of

THEORY: Defects of Classical free electron theory —Quantum Free electron theory - concept of Fermi Energy.	electron & concept of hole. Semiconductor Physics: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation- Hall effect in semiconductors.—
UNIT-VI BAND THEORY OF SOLIDS: Bloch's theorem (qualitative) – Kronig – Penney model – energy bands in crystalline solids – classification of crystalline solids – effective mass of electron & concept of hole. SEMICONDUCTOR PHYSICS: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation-Hall effect in semiconductors	•

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Applied Chemistry	Applied Chemistry
Title	B1/410/B1/410	
Course	R161106/R161221	171BS1T05/ 171BS2T05
Code	LINET L LUCII DOLLA FER LUCI	
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT - I: High Polymers and Plastics:
	Polymerisation : Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
	regular polymers - methods of	- Physical and mechanical properties -
	polymerization (emulsion and	Plastics as engineering materials:
	suspension) -Physical and mechanical	advantages and limitations -
	properties - Plastics as engineering	Thermoplastics and Thermosetting plastics
Syllabus	materials : advantages and limitations -	- Compounding and fabrication
,	Thermoplastics and Thermosetting	(compression moulding, injection
	plastics - Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques)- Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers – Natural rubber-	Elastomers – Natural rubber- compounding
	compounding and vulcanization -	and vulcanization – Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol – Applications of
	Thiokol and polyurethanes – Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	
	Fiber reinforced plastics – Biodegradable	
	polymers – Conducting polymers.	•
	UNIT II: FUEL TECHNOLOGY Fuels:-	UNIT - II: Fuel Technology: Fuels:-
	Introduction - Classification - Calorific	Introduction – Classification – Calorific
	value - HCV and LCV - Dulong's formula -	value - HCV and LCV - Dulong's formula -
	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis –
	 Coal — Proximate and ultimate analysis 	Significance of the analyses – Liquid fuels –
	- Significance of the analyses - Liquid	Petroleum- Refining - Cracking - Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol -Petrol knocking - Diesel knocking -
	Synthetic petrol -Petrol knocking - Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents - Power alcohol - Bio-diesel -
	Anti-knock agents – Power alcohol – Bio-	Gaseous fuels - Natural gas. LPG and CNG -
	diesel – Gaseous fuels – Natural gas. LPG	Combustion – Calculation of air for the
	and CNG - Combustion - Calculation of	combustion of a fuel – Flue gas analysis –
	air for the combustion of a fuel - Flue gas	Orsat apparatus.

analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Introduction, classification, examples: RDX, TNT and ammonium nitrite - rocket fuels

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion:-Definition - Theories of Corrosion (electrochemical) - Formation of galvanic different cells hv metals, concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating)

UNIT - III: Electrochemical Cells and Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses this series-Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition Theories of Corrosion (electrochemical) – Formation of galvanic cells by different metals, by concentration cells, by and differential aeration waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods – Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Superconductors:- Type-I & Type-2, properties & applications Green synthesis:- Principles – 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction —
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors: -Type —
I, Type II — Characteristics and applications
Semiconductors: - Preparation of
semiconductors, working of diods and
transistors. Green synthesis: -Principles
Liquid crystals:-Introduction — Types —
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: SOLID STATE CHEMISTRY Types of solids - close packing of atoms and ions - BCC , FCC, structures of rock salt - cesium chloride- spinel - normal and inverse spinels, Non-elemental

UNIT - V: Non-Conventional Energy Sources: Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) – photovoltaic cell: design, semiconducting Materials:Stoichiometric, controlled valency & Chalcogen photo/semiconductors,
Preparation of Semiconductors Semiconductor Devices:- p-n junction diode as rectifier - junction transistor.
Insulators (electrical and electronic applications) Magnetic materials:- Ferro and ferri magnetism. Hall effect and its applications.

working and its importance Nonconventional energy sources: (i) Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introduction-schematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction- Design and working-movement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels.

UNIT VI: NON CONVENTIONAL ENERGY SOURCES AND STORAGE DEVICES Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) - photovoltaic cell: design, working and its importance Non-conventional energy sources: (i) Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introductionschematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction- Design and workingmovement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels Fuel cells:-Introduction representation, H2-O2 fuel cell: Design and working, advantages and limitations. Types of fuel cells: Alkaline fuel cell methanol-oxygen - phosphoric acid fuel cells - molten carbonate fuel cells.

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-III •	Mathematics-III
Title	4010000	
Course	R161203	171BS2T06
Code		
	UNIT I: Linear systems of equations:	UNIT - I: Laplace transforms: Laplace
	Rank-Echelon form-Normal form -	transforms of standard functions-First
	Solution of linear systems - Gauss	Shifting theorem, Change of scale,
Syllabus	elimination - Gauss Jordon- Gauss Jacobi	Multiplication with t, Division by t -
Offinous	and Gauss Seidal methods. Applications:	Transforms of derivatives and integrals –
	Finding the current in electrical circuits.	Unit step function –Dirac's delta function,
	HAUT II. Flore and the Figure 1	Periodic functions.
	UNIT II: Eigen values - Eigen vectors and	UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen	Inverse Laplace transforms – Convolution
	vectors- Properties - Cayley-Hamilton	theorem (without proof), Second shifting
	theorem - Inverse and powers of a matrix	theorem. *(MATLAB Exercise: Computing
	by using Cayley-Hamilton theorem-	Laplace transform off (t) using symbolic
*	Diagonalization- Quadratic forms-	toolbox, Solving initial value problems using
	Reduction of quadratic form to canonical	'dsolve') Applications: Evaluating improper
	form – Rank - Positive, negative and semi	integrals, solving initial value problems
	definite - Index - Signature. Applications:	using Laplace transforms.
	Free vibration of a two-mass system.	
	UNIT III: Multiple integrals: Curve tracing:	UNIT - III: Multiple integrals and Beta,
	Cartesian, Polar and Parametric forms.	Gamma functions: Multiple integrals:
	Multiple integrals: Double and triple	Double and triple integrals - Change of
	integrals - Change of variables - Change	variables - Change of order of integration,
	of order of integration. Applications: Finding Areas and Volumes.	Beta and Gamma functions- Properties -
	rinding Areas and volumes.	Relation between Beta and Gamma
		functions Applications: Finding Areas and
	UNIT IV: Special functions: Beta and	Volumes. UNIT - IV: Vector Differentiation: Gradient -
	Gamma functions- Properties - Relation	
	between Beta and Gamma functions.	Directional Derivatives - Divergence- Curl -
	Evaluation of improper integrals.	Laplacian operator - Vector identities. Applications: Equation of continuity,
	Applications: Evaluation of integrals.	potential surfaces
· .	UNIT V: Vector Differentiation: Gradient-	UNIT - V: Vector integration: Line integral –
	Divergence- Curl - Laplacian and second	Work done - Surface and volume integrals,
	order operators -Vector identities.	Green's Theorem, Stokes Theorem and
	The special section rections	oreen's medicing stokes medicin and

Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
UNIT VI: Vector Integration: Line integral - Work done - Potential function - Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	· Engineering/Applied Chemistry Lab	Engineering Chemistry Lab
Title	R161227/ R161118	181801101
Course Code	R16122// R161118	171BS1L01
	1. Introduction to Chemistry laboratory -	Exercise 1: Introduction to Chemistry
	Molarity, Normality, Primary, secondary	laboratory - Molarity, Normality, Primary,
	standard solutions, Volumetric titrations,	secondary standard solutions, Volumetric
	Quantitative analysis, Qualitative	titrations, Quantitative analysis, Qualitative
	analysis, etc	analysis, etc.
	2. Trial experiment - Determination of	Exercise 2: Trial experiment -
	HCl using standard Na2CO3 solution	Determination of HCI using standard
Sullabus		Na2CO3 solution.
Syllabus	3. Determination of alkalinity of a sample	Exercise 3: Preparation of Phenol
	containing Na2CO3 and NaOH.	Formaldehyde resin (Bakelite).
	4. Determination of KMnO4 using	Exercise 4: Determination of KMnO4 using
	standard Oxalic acid solution	standard Oxalic acid solution.
	5. Determination of Ferrous iron using	Exercise 5: Determination of ferrous iron
	standard K2Cr2O7 solution	using standard K2Cr2O7 solution.
	6. Determination of Copper using	Exercise 6: Preparation of Bio-Diesel.
	standard K2Cr2O7 solution	
	7. Determination of temporary and	Exercise 7: Determination of temporary
	permanent hardness of water using	and permanent hardness of water using
	standard EDTA solution.	standard EDTA solution.
	8. Determination of Copper using	Exercise 8: Determination of Copper using
	standard EDTA solution	standard EDTA solution.
	9. Determination of Iron by a	Exercise 9: Determination of Iron by a
	Colorimetric method using thiocynate as	Colorimetric method using thiocynate as
	reagent.	reagent.
	10. Determination of pH of the given	Exercise 10: Determination of pH of the
	sample solution using pH meter.	given sample solution using pH meter.
	11. Conductometric titration between	Exercise 11: Conduct metric titration
	strong acid and strong base.	between strong acid and strong base.
	12. Conductometric titration between	Exercise 12: Conduct metric titration
	strong acid and weak base.	between strong acid and weak base.
	13. Potentiometric titration between	Exercise 13: Potentiometric titration
	strong acid and strong base.	between strong acid and strong base.
	14. Potentiometric titration between	Exercise 14: Potentiometric titration

strong acid and weak base.	between strong acid and weak base.
Determination of Zinc using standard EDTA solution.	Exercise 15: Determination of Zinc using standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin - C.

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course	Control Systems	Control Systems
Title		
Course	RT31043	R1622042
Code		
	UNIT I	UNIT-1
	INTRODUCTION	Introduction
	Concepts of Control Systems- Open	System Control System, Open Loop
	Loop and closed loop control systems	Control System, Closed loop Control
	and their differences- Different	System, Different Examples
	examples of control systems-	Mathematical models of Physical
	Classification of control systems,	Systems
	Feed-Back Characteristics, Effects of	Differential equations of physical
	feedback.	systems, Transfer functions. Block
	Mathematical models – Differential	diagram Algebra, Signal flow graphs
	equations, Impulse Response and	with illustrative examples
	transfer functions - Translational and	Effects of Feedback
	Rotational mechanical systems	Feedback Characteristics and its
		advantages, Linearizing effect of
		feedbac
	UNIT II	UNIT-2
	TRANSFER FUNCTION	Controller Components
	REPRESENTATION	DC Servomotor (Armature Controlled
	Transfer Function of DC Servo motor	and Field Controlled) with necessary
	- AC Servo motor- Synchro	derivation for transfer function,AC
	transmitter and Receiver, Block	Servomotor and its transfer function,
	diagram representation of systems	AC Tachometer, Potentiometer,
	considering electrical systems as	Synchros, AC Position ControlSystems
	examples -Block diagram algebra -	Time Response Analysis
	Representation by Signal flow graph -	Standard test Signals, Time response of
	Reduction using mason's gain	first and second order systems, steady
	formula.	state errors and error
	•	constants, Effect of adding a zero to a
		system, Design specifications of second
	************	order systems, Performanceindices
	UNIT III	UNIT-3
	TIME RESPONSE ANALYSIS	Concepts of Stability and Algebraic
	Standard test signals - Time response	Criteria

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	of first order systems – Characteristic Equation of Feedback control systems, Transient response of second order systems - Time domain specifications – Steady state response - Steady state errors and error constants – Effects of proportional derivative, proportional integral systems. UNIT IV	The concept of Stability, Necessary Conditions for Stability, Routh-Hurwitz Srability Criterion, Relative stability analysis, The Root Locus Technique Introduction, The Root Locus concepts, Construction of Root Loci UNIT-4
	STABILITY ANALYSIS IN S-DOMAIN The concept of stability – Routh's stability criterion – qualitative stability and conditional stability – limitations of Routh's stability. Root Locus Technique: The root locus concept - construction of root loci-effects of adding poles and zeros to G(s)H(s) on the root loci.	Frequency response analysis Introduction, Correlation between time and frequency response, Polar Plots, Bode Plots, Nyquist Stability Criterion
	UNIT V FREQUENCY RESPONSE ANALYSIS Introduction, Frequency domain specifications-Bode diagrams- Determination of Frequency domain specifications and transfer function from the Bode Diagram-Phase margin and Gain margin-Stability Analysis from Bode Plots. STABILITY ANALYSIS IN FREQUENCY DOMAIN: Polar Plots, Nyquist Plots Stability Analysis.	UNIT-5 Introduction to Design The design problem, Preliminary consideration of classical design, Realization of basic Compensators, Cascade compensation in time domain and frequency domain, Tuning of PID Controllers
	UNIT VI CLASSICAL CONTROL DESIGN TECHNIQUES Compensation techniques – Lag, Lead, Lead-Lag Controllers design infrequency Domain, PID Controllers. State Space Analysis of ContinuousSystems Concepts of state, state variables and state model, derivation of state models from block diagrams, Diagonalization- Solving the Time	UNIT-6 State Variable Analysis and Design Introduction, Concepts of State, State Variables and State models, State models for linear continuous-time systems, State variables and linear discrete-time systems, Solution of state equations and Concepts of Controllability and Observability.

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invariantstate Equations- State	
Transition Matrix and it's Properties –	
Concepts of Controllability and	
Observability.	

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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Management Science	Management Science
Course Code	RT22043	R1622026
	UNIT – I:	UNIT I
	Introduction to Management: Concept – Nature and Importance of Management, Functions-Evaluation of Management, Motivation Theories – Leadership Styles – Decision Making Process-designing Organization	Introduction to Management: Concept -nature and importance of Management -Generic Functions of Management – Evaluation of Management thought- Theories of Motivation – Decision making process-Designing
	Structure – Principles and types of	organization structure- Principles of
, med	Organization.	organization – Organizational typology- International Management: Global Leadership and Organizational behaviorEffectiveness(GLOBE)
		structure
	UNIT – II: Operations and Project Management: Work-Study-Statistical Quality Control Through Control Charts-Inventory Control-EOQ & ABC Analysis (Simple Problems) Project Management- PERT/CPM-Project Crashing (Simple Problem).	UNIT II Operations Management: Principles and Types of Management – Work study- Statistical Quality Control-Control charts (P-chart, R-chart, and C-chart) Simple problems- Material Management: Need for Inventory control- EOQ, ABC analysis (simple problems) and Types of ABC analysis (HML, SDE, VED, and FSN analysis).
	UNIT – III: Functional Management: Concept and Functions of Finance, HR, Production, Marketing Management and Services – Job Evolution and Merit Rating – Product Life Cycles – Channels of Distribution	UNIT III Functional Management: Concept of HRM, HRD and PMIR- Functions of HR Manager- Wage payment plans(Simple Problems) – Job Evaluation and Merit Rating - Marketing Management- Functions of Marketing –

 Types/Methods of Production. 	Marketing strategies based on product
	Life Cycle. Channels of distributions.
	Operationlizing change through
	performance management.
UNIT – IV:	UNIT IV
Strategic Management: Vision,	Project Management: (PERT/CPM):
Mission, Goals, Strategy - Corporate	Development of Network – Difference
Planning Process – Environmental	between PERT and CPM Identifying
Scanning – SWOT analysis –	Critical Path- Probability- Project
Different	Crashing (Simple Problems)
Steps in Strategy Formulation,	<i>(</i> ,,,
Implementation and Evaluation.	
UNIT - V:	UNIT V
Business Ethics & Communications:	Strategic Management: Vision,
Ethics in Business and Management –	Mission, Goals, Strategy – Elements of
Ethics in HRM, Finance & Marketing	Corporate Planning Process –
Management – Business Ethics & Law	Environmental Scanning – SWOT
 Management Business Etines & Ear	analysis- Steps in Strategy Formulation
	and Implementation, Generic Strategy
	Alternatives. Global strategies, theories
	of Multinational Companies.
UNIT – VI:	UNIT VI
30-20-20-20-20-20-20-20-20-20-20-20-20-20	Company of the control of the contro
Contemporary Management	Contemporary Management Practice:
 Practices: Basic concepts of MIS,	Basic concepts of MIS, MRP, Justin-
MRP, Just-	Time(JIT) system, Total Quality
In-Time (JIT)System, Total Quality	Management(TQM), Six sigma and
Management (TQM), Six Sigma and	Capability Maturity Model(CMM)
Capability Maturity Models (CMM)	Levies, Supply Chain Management,
Levies, Supply Chain Management,	Enterprise Resource Planning (ERP),
Enterprise Resource Planning (ERP),	Business Process outsourcing (BPO),
Performance Management, Business	Business process Re-engineering and
Process Outsourcing (BPO), Business	Bench Marking, Balanced Score Card.
Process Re-Engineering and Bench	
Marking, Balance Score Card.	

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Date: 08-06-2017

Department of Computer Science and Engineering

Syllabus revision Index 2017-2018

S.No	Name of the course .	Percentage of syllabus change
1	Mathematics – I	25%
2	Mathematics – II	20%
3	Applied Physics	20%
4	English Communication Skills Lab – I	80%
5	Computer Programming Lab	40%
6	Mathematics – III	20%
7	Environmental Studies	20%
8	Applied Chemistry	20%
9	Software Engineering	60%
10	Computer Organization	50%
11	Advanced Data Structures Lab	70%

Program Coordinator

Head of the Department Head of the Department

Department of CSE ADITYA ENGINEERING COLLEGE (A9)



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Department of Humanities & Basic Sciences

Regulation	· Pre-Revision	Post-Revision .
Course	Mathematics-I	Mathematics-I ·
Title		
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equations Equations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax V(x), xV(x)-
	V(x), xV(x)- Method of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
		Problems using the command 'dsolve')
		Applications: Electric circuits, simple
		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
	theorems - Transforms of derivatives and	Solution of linear systems – Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method.
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms- Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	
	differential equations (initial value	
	problems) using Laplace transforms.	
	UNIT IV: Partial differentiation:	UNIT IV: Eigen values - Eigen vectors and
	Introduction- Homogeneous function-	Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain	vectors – Properties of eigen values
	ruleGeneralized Mean value theorem for	(without proof) – Cayley -Hamilton

theorem (without proof) - Inverse and single variable (without proof)-Taylor's powers of a matrix by using Cayley and Mc Laurent's series expansion of functions of two variables- Functional Hamilton theorem- Diagonalization-Quadratic forms- Reduction of quadratic dependence- Jacobian. Applications: form to canonical form using orthogonal Maxima and Minima of functions of two transformation-Nature of the quadratic variables without constraints form. *(MATLAB Exercise: All Basic Lagrange's method (with constraints). Operations on matrices are to be implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors) UNIT V: First order Partial differential UNIT V: Partial differentiation and Partial differential equations: Homogeneous equations: Formation of partial function-Euler's theorem-Total derivativedifferential equations by elimination of arbitrary constants and arbitrary Chain rule-Taylor's and Maclaurin's series functions -solutions of first order linear expansion of functions of two variables-Functional dependence Jacobian. (Lagrange) equation and nonlinear Formation of partial differential equations (standard types) equations. by elimination of arbitrary constants and arbitrary functions –solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically). UNIT VI: Higher order Partial differential equations: Solutions of Linear Partial differential equations with constant coefficients. RHS term of the type e^(ax+by), sin(ax+by), cos(ax+by), x^m y^n Classification of second order partial differential equation

G - V . Russes Signature of the course coordinator

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	. Post-Revision
Course	Mathematics-II	Mathematics-II (except for ECE)
Title		
Course	R161202	171BS2T02
Code		
	UNIT I: Solution of Algebraic and	UNIT I: Solution of Algebraic and
	Transcendental Equations: Introduction-	Transcendental Equations and
	Bisection method – Method of false	Interpolation: Introduction- Bisection
	position – Iteration method – Newton	method – Method of false position –
	Raphson method (One variable and	Iteration method – Newton - Raphson
	simultaneous Equations).	method. Errors in polynomial interpolation
		– Finite differences- Forward differences-
		Backward differences –Central differences
		– Relation between operators - Differences
		of a polynomial-Newton's formulae for
		interpolation – Interpolation with unequal
		intervals - Lagrange's interpolation formula.
	UNIT II: Interpolation: Introduction-	UNIT II: Numerical Integration and solution
	Errors in polynomial interpolation – Finite	of Ordinary Differential equations:
	differences- Forward differences,	Trapezoidal rule- Simpson's 1/3rd and
	Backward differences –Central	3/8th rule-Solution of ordinary differential
	differences – Symbolic relations and	equations by Taylor's series-Picard's
Collebora	separation of symbols - Differences of a	method of successive approximations-
Syllabus	polynomial-Newton's formulae for	Euler's method, Modified Euler's method –
	interpolation – Interpolation with	Runge - Kutta method (fourth order).
	unequal intervals - Lagrange's	
	interpolation formula.	UNIT III: Fourier Series: Fourier series of
	UNIT III: Numerical Integration and solution of Ordinary Differential	periodic function - Dirichlet's conditions for
	equations: Trapezoidal rule- Simpson's 1/3rd and 3/8th rule-Solution of ordinary	Fourier expansion - Functions having points of discontinuities—Change of interval – Even
	differential equations by Taylor's series-	and odd functions – Half-range series.
	Picard's method of successive	and odd functions – nan-range series.
	approximations-Euler's method -	
	RungeKutta method (second and fourth	
	order).	
	UNIT IV: Fourier Series: Introduction-	UNIT IV: Fourier Transforms: Fourier
	Periodic functions – Fourier series of -	integral theorem (without proof) – Fourier
	Terrodic functions - Pourier series of -	integral theorem (without proof) - rouner

periodic function - Dirichlet's conditions -	sine and cosine integrals - sine and cosine
Even and odd functions -Change of	transforms – properties – inverse
interval- Half-range sine and cosine	transforms – Finite Fourier transforms.
series.	
UNIT V: Applications of PDE: Method of	UNIT V: Applications of Partial Differential
separation of Variables- Solution of One	Equations: Classification of Higher order
dimensional Wave, Heat and two	P.D.E - Method of separation of Variables-
dimensional Laplace equation.	Solution of One dimensional Wave
	equation, Heat equation and two-
	dimensional Laplace equation.
. UNIT VI: Fourier Transforms: Fourier	•
integral theorem (without proof) -	
Fourier sine and cosine integrals - sine	
and cosine transforms - properties -	
inverse transforms – Finite Fourier	
transforms.	

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Department of Humanities & Basic Sciences

Regulation	· Pre-Revision	Post-Revision .
Course	Applied Physics	Applied Physics •
Title		
Course	R161207	171BS1T04/171BS2T04
Code		
	UNIT-I INTERFERENCE: Principle of	UNIT-I: Interference: Principle of
	Superposition – Coherent Sources –	Superposition – Coherence– Interference in
	Interference in thin films (reflection	thin films (reflection geometry) - Newton's
	geometry) – Newton's rings –	rings – construction and working principle
	construction and basic principle of	of Interferometer.
	Interferometers.	
	UNIT-II DIFFRACTION: Fraunhofer	UNIT-II: Diffraction: Fraunhofer diffraction
Syllabus	diffraction at single slit - Cases of double	at single slit – Cases of double slit, N-slits, &
Synabus	slit, N-slits & Circular Aperture	circular aperture, grating equation –
	(Qualitative treatment only)-Grating	Rayleigh criterion of resolving power-
	equation - Resolving power of a grating,	Resolving power of a grating, Telescope
	Telescope and Microscopes.	and Microscopes
	UNIT-III POLARIZATION: Types of	UNIT-III: Polarization: Types of Polarization
	Polarization – Methods of production -	- Methods of production - Nicol Prism -
	Nicol Prism -Quarter wave plate and Half	Quarter wave plate and Half Wave plate-
	Wave plate – Working principle of	working principle of polarimeter
	Polarimeter (Sacharimeter). LASERS:	(Sacharimeter). LASERS: Characteristics-
	Characteristics – Stimulated emission –	Stimulated emission – Einstein's Transition
	Einstein's Transition Probabilities	ProbabilitiesPumping schemes- Ruby laser
	Pumping schemes - Ruby laser - Helium	– Helium Neon laser-CO2 Laser-
	Neon laser.	Applications
	UNIT-IV ELECTROMAGNETIC FIELDS:	UNIT-IV: Quantum Mechanics: Introduction
	Scalar and Vector Fields – Electric	–Matter waves – Schrödinger Time
	Potential- Gradient, Divergence of fields –	Independent and Time Dependent wave
	Gauss and Stokes theorems-Propagation	equations – Particle in a box. FREE
	of EM waves through dielectric medium.	ELECTRON THEORY: Defects of classical free
		electron theory –Quantum Free electron
		theory – concept of Fermi Energy
	UNIT-V QUANTUM MECHANICS:	UNIT-V: Band Theory of Solids: Bloch's
	Introduction - Matter waves -	theorem (qualitative) – Kronig – Penney
	Schröedinger Time Independent and	model (Qualitative) – energy bands in
	Time Dependent wave equations –	crystalline solids – classification of
	Particle in a box. FREE ELECTRON	crystalline solids– effective mass of

theory –Quantum Free electron theory - concept of Fermi Energy.	electron & concept of hole. Semiconductor Physics: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation- Hall effect in semiconductors.–
UNIT-VI BAND THEORY OF SOLIDS: Bloch's theorem (qualitative) – Kronig – Penney model – energy bands in crystalline solids – classification of crystalline solids – effective mass of electron & concept of hole. SEMICONDUCTOR PHYSICS: Conduction – Density of carriers in Intrinsic and Extrinsic semiconductors – Drift & Diffusion – relevance of Einstein's equation-Hall effect in semiconductors	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	English Communication Skills Lab -I	English Communication Skills Lab -I
Title	8.20.0	1211101101
Course Code	R161114	171HS1L01
	UNIT 1: 1. WHY study Spoken English?	PRACTICE 1: A. Greeting, Introducing and
	2. Making Inqueries on the phone,	taking leave
	thanking and responding to Thanks Practice work.	B. Pure Vowels
	UNIT 2: 1. Responding to Requests and	PRACTICE 2: A. Giving Information and
	asking for Directions	Asking for Information
	Practice work.	B. Diphthongs
	UNIT 3: 1. Asking for Clarifications,	PRACTICE 3: A. Inviting, Accepting and
	Inviting, Expressing Sympathy,	Declining Invitations
	Congratulating 2. Apologising, Advising,	B. Consonants
	Suggesting, Agreeing and Disagreeing Practice work.	96
	UNIT 4: 1. Letters and Sounds	PRACTICE 4: A. Commands, Instructions
	Practice work.	and Requests
		B. Accent and Rhythm
	UNIT 5: 1. The Sounds of English	PRACTICE 5: A. Suggestions and Opinions
	Practice work.	B. Intonation
Syllabus	0.	
	UNIT 6: 1. Pronunciation 2. Stress and	
	Intonation	
	Practice work	

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title		4 -
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, ls, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors – Turbo, vi, Emacs 1.2) C Program to Perform Addition, Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise – 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise – 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario - 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the ATM and Net banking for which OTP was sent to his registered mobile number. Using this OTP number he has

generating PIN number, he can use further transactions. Maximum log can make is 3 times. Sample Input: OTP: 6732 If valid	
further transactions. Maximum log can make is 3 times. Sample Input: OTP: 6732	
can make is 3 times. Sample Input: OTP: 6732	
OTP: 6732	
OTP: 6732	
I II Valid	
Enter PIN: 8858	
Confirm your PIN: 8858	
Sample output:	
valid/Invalid	
PIN generated successfully.	
Note: OTP is hard coded.	
3.4) Scenario - 2 RESET PASSWO	ORD.
Sindhuja was using Syndicate I	
Online Account. She wanted to p	
bills through Online. But she forg	-
password. Now she has to res	
password. For resetting the pass	
she has to select reset option fro	m the
Menu.	
NOTE: using switch case.	
Sample input:	
1. Fast withdrawal	
2. Mini Statement.	
3. Balance Enquiry	
4. Reset Password	
Enter your choice: 4	
Sample Output: Reset password	
password: ***** Confirm pass	sword:

Exercise – 4 Control Flow - II Exercise – 4:	
a) Write a C Program to Find Whether Control Flow - II	71 .11
the Given Number is 4.1) Write a C Program to Find W	nether
i) Prime Number the Given Number is	
ii) Armstrong Number i) Prime Number	
b) Write a C program to print Floyd ii) Armstrong Number	_
Triangle 4.2) Write a C program to print	Floyd
c) Write a C Program to print Pascal Triangle	
Triangle 4.3) Write a C Program to print	Pascal
Triangle	
E	
Exercise – 5 Functions Exercise – 5:	
a) Write a C Program demonstrating Control Flow – III	
of parameter passing in Functions and 5.1 Write a C program to find the	ne sum

returning values. b) Write a C Program illustrating Fibonacci, Factorial with Recursion without Recursion.	of individual digits of a positive integer. 5.2) Write a C program to check whether given number is palindrome or not. 5.3) Write a C program to read two numbers, x and n, and then compute the sum of the geometric progression 1+x+x2+x3++xn. 5.4) Scenario - 3 Student Attendance report Generation: Some of the school staff had failed to maintain the attendance of the students, causing lack of essential records related
	to students attendance that should be submitted in a parents meet. The school management has decided to automate the process in order to maintain the attendance of every student effectively. You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not.
Exercise – 6 Control Flow - III	Exercise 6:
a) Write a C Program to make a	Arrays
simple Calculator to Add, Subtract,	Demonstration of arrays
Multiply or Divide Using	6.1) Linear Search.
switchcase	6.2) Bubble Sort.
b) Write a C Program to convert	
decimal to binary and hex (using	
switch call function the	Red FM has launched a program called
function)	Celebrity of the week in their channel.
	Listeners are given a toll free number
	where they can listen to list of
	celebrities. Listeners can choose their
	favourite celebrity from the list and vote for him/her. The votes are validated
	from Monday to Saturday. The one with
	highest votes is called as "Celebrity of
	the Week" and his/her songs are played
	in the program, which is aired on
	Sundays. Now write a program to find
	the celebrity of the week.
	are corecity of the woods.
Exercise – 7 Functions - Continued	Exercise – 7:
Write a C Program to compute the	Exercise – 7: Functions
	Exercise – 7: Functions

expansion. (use factorial function)	returning values.
	7.2) Write a C Program to find
	Fibonacci, Factorial of a number with
	Recursion and without Recursion.
	7.3) Scenario – 5 SELF DRIVE
	RENTAL
	Sadiq and his friends are going to
	Banglore. But they don't have a vehicle
	in Banglore. For that they go to rental
	cars to take car for rent. You have find
	out what is total amount of car's rent.
	The car's rentals and rules are as
	follows.
	i) Minimum booking is 4.
h	ii) There are 3 types of cars
	iii) There are 3 categories in cars rental
	FOR SWIFT,
	• In LTTE 5 kms are free for one
	hour and Rs.70 per one hour, if they
	exceed 5kmph, then Rs.12 per km.
	• In CLASS, 10 kms are free for
	one hour and Rs.90 per one hour, if they
	exceed 10kmph, then Rs.12 per km.
	• In XL, 15 kms are free for one
	hour and Rs.110 per one hour, if they
	exceed 15kmph, then Rs.12 per km.
Exercise – 8 Arrays	
Demonstration of arrays	Exercise – 8:
a) Search-Linear.	Strings
b) Sorting-Bubble, Selection.	8.1) Implementation of string
c) Operations on Matrix.	manipulation operations with library
1, 2F	function.
	8.2) Implementation of string
	manipulation operations without library
	function.
	i. copy
	ii. concatenate
	iii. length
	iv. compare i. copy
	ii. concatenate
	iii. length
	iv. compare
	8.3) Verify whether the given
	string is a palindrome or not
	8.4) Scenario – 6 Word with
	or i boomalo o mora with

	Obesity: Jeeth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
Exercises - 9 Structures a) Write a C Program to Store Information of a Movie Using Structure b) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	9.1) Write a C Program to Access Elements of an Array Using Pointer 9.2) Write a C Program to find the sum of numbers with arrays and pointers.
Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	10.1) Write a C program to find sum of
Exercise – 11 Dynamic Memory Allocations a) Write a C program to find sum of relements entered by user. To perform this program,	Exercises – 11: Structures: 11.1) Write a C Program to Store

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs Information Using Structures with Dynamically Memory Allocation

- 11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function
- 11.4) Scenario 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date = 5

Late fee per day = Rs. 50

Fine paid by the student is 5 * 50 = 250.

Exercise - 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

- 1. Add New Student
- 2. Update Existing Student

	3. Delete Existing Student 4. Retrieve A Particular/All Students Sample Input: Choose the task you want to perform: 1. Add 2. Update 3. Delete 4. Retrieve Your choice: 1 Enter student details: Name: Akhil Age: 5 Class: 1 Sample Output: Student details added
Exercise -13 Files	Sumpris Suspens Disastra details acces
a)Write a C programming code to open a file and to print it contents on screen.	
b)Write a C program to copy files Exercise - 14 Files Continued	
 a) Write a C program merges two files and stores their contents in another file. b) Write a C program to delete a file. 	
Exercise - 15	
a) System Assembling, Disassembling and identification of Parts / Peripherals. b) Operating System Installation-Install Operating Systems like Windows, Linux along with necessaryDevice Drivers.	
Exercise – 16	
a) MS-Office / Open Office i) Word - Formatting, Page Borders, Reviewing, Equations, symbols. ii) SpreadSheet - organize data, usage of formula, graphs, charts. iii) Powerpoint - features of power point, guidelines for preparing an effective presentation. b) Network Configuration & Software Installation-Configuring TCP/IP, Proxy, and firewall settings. Installing application software, system software	
& tools.	

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Signature of the HOD



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision .	Post-Revision
Course	Mathematics-III .	Mathematics-III
Title		
Course	R161203	171BS2T06
Code		
	UNIT I: Linear systems of equations:	UNIT - I: Laplace transforms: Laplace
	Rank-Echelon form-Normal form -	transforms of standard functions-First
	Solution of linear systems - Gauss	Shifting theorem, Change of scale,
	elimination - Gauss Jordon- Gauss Jacobi	Multiplication with t, Division by t -
Syllabus	and Gauss Seidal methods. Applications:	Transforms of derivatives and integrals –
	Finding the current in electrical circuits.	Unit step function –Dirac's delta function,
		Periodic functions.
	UNIT II: Eigen values - Eigen vectors and	UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen	Inverse Laplace transforms – Convolution
	vectors- Properties - Cayley-Hamilton	theorem (without proof), Second shifting
	theorem - Inverse and powers of a matrix	theorem. *(MATLAB Exercise: Computing
	by using Cayley-Hamilton theorem-	Laplace transform off (t) using symbolic
	Diagonalization- Quadratic forms-	toolbox, Solving initial value problems using
	Reduction of quadratic form to canonical	'dsolve') Applications: Evaluating improper
	form - Rank - Positive, negative and semi	integrals, solving initial value problems
	definite - Index - Signature. Applications:	using Laplace transforms.
	Free vibration of a two-mass system.	
	UNIT III: Multiple integrals: Curve tracing:	UNIT - III: Multiple integrals and Beta,
	Cartesian, Polar and Parametric forms.	Gamma functions: Multiple integrals:
	Multiple integrals: Double and triple	Double and triple integrals - Change of
	integrals – Change of variables – Change	variables - Change of order of integration,
	of order of integration. Applications:	Beta and Gamma functions- Properties
	Finding Areas and Volumes.	Relation between Beta and Gamma
		functions Applications: Finding Areas and
		Volumes.
	UNIT IV: Special functions: Beta and	UNIT - IV: Vector Differentiation: Gradient -
	Gamma functions- Properties - Relation	Directional Derivatives - Divergence- Curl -
	between Beta and Gamma functions.	Laplacian operator - Vector identities.
	Evaluation of improper integrals.	Applications: Equation of continuity,
	Applications: Evaluation of integrals.	potential surfaces
	UNIT V: Vector Differentiation: Gradient-	UNIT - V: Vector Integration: Line integral -
	Divergence- Curl - Laplacian and second	Work done - Surface and volume integrals,
	order operators -Vector identities.	Green's Theorem, Stokes Theorem and

Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
UNIT VI: Vector Integration: Line integral - Work done - Potential function - Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Environmental Studies	Environmental Studies
Title		
Course	R161108	171HS1T02/171HS2T02
Code		
	UNIT - I Multidisciplinary nature of	UNIT -I: Ecosystems: Scope of
	Environmental Studies: Definition, Scope	environmental studies, Structure-
	and Importance –Sustainability:	Producers, consumers and decomposers
	Stockholm and Rio Summit-Global	Function – Food chain, Food web, Tropic
	Environmental Challenges: Global	structure and Energy flow in the ecosystem
	warming and climate change, Carbon	Ecological pyramids, nutrient recycling,
	Credits, acid rains, ozone layer depletion,	primary and secondary production,
Cullabus	population growth and explosion, effects.	ecosystem regulation. Ecological succession
Syllabus	Role of information Technology in	Terrestrial ecosystem and aquatic
	Environment and human health.	ecosystem - Introduction, types,
	Ecosystems: Concept of an ecosystem	characteristic features.
100	Structure and function of an ecosystem	
	Producers, consumers and decomposers.	
	- Energy flow in the ecosystem -	
	Ecological succession Food chains, food	
	webs and ecological pyramids	
	Introduction, types, characteristic	
	features, structure and function of Forest	26
	ecosystem, Grassland ecosystem, Desert	
	ecosystem, Aquatic ecosystems.	
	UNIT - II Natural Resources: Natural	UNIT – II: Natural Resources: Natural
	resources and associated problems	resources and associated problems Forest
	Forest resources - Use and over -	resources – Use and over – exploitation,
	exploitation, deforestation - Timber	deforestation – Timber extraction – Mining,
	extraction - Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	people Water resources – Use and over
	resources - Use and over utilization of	utilization of surface and ground water -
	surface and ground water - Floods,	Floods, drought, conflicts over water, dams
	drought, conflicts over water, dams -	– benefits and problems Mineral resources:
	benefits and problems Mineral resources:	Use and exploitation, environmental effects
	Use and exploitation, environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

III Biodiversity LINIT conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India Conservation of biodiversity: conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India - Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well Waste being. Solid Management: Sources, Classification, effects control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and

UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation

rehabilitation of people; its problems and	of people; its problems and concerns.
concerns. Environmental ethics: Issues	Global challenges Environmental ethics:
and possible solutions. Environmental	Issues and possible solutions.
Protection Act -Air (Prevention and	Environmental Protection Act - Air
Control of Pollution) ActWater	(Prevention and Control of Pollution) Act
(Prevention and control of Pollution) Act -	Water (Prevention and control of Pollution)
Wildlife Protection Act -Forest	Act -Wildlife Protection Act - Forest
Conservation Act-Issues involved in	Conservation Act-Issues involved in
enforcement of environmental	enforcement of environmental legislation
legislationPublic awareness.	Public awareness and Environmental
	management.
UNIT - VI Environmental Management:	
Impact Assessment and its significance	
	2
The state of the s	
	0
	concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. —Water (Prevention and control of Pollution) Act - Wildlife Protection Act -Forest Conservation Act-Issues involved in enforcement of environmental legislationPublic awareness. UNIT — VI Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP

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Signature of the HOD

Head of the Department Department of H & BS Aditya Engineering College (A9)



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision .
Course	Applied Chemistry	Applied Chemistry
Title		
Course	R161106/R161221	171BS1T05/ 171BS2T05
Code		
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT - I: High Polymers and Plastics:
	Polymerisation : Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
	regular polymers – methods of	- Physical and mechanical properties –
	polymerization (emulsion and	Plastics as engineering materials:
	suspension) -Physical and mechanical	advantages and limitations –
	properties – Plastics as engineering	Thermoplastics and Thermosetting plastics
Syllabus	materials : advantages and limitations -	 Compounding and fabrication
Syllabus	Thermoplastics and Thermosetting	(compression moulding, injection
20 140 15	plastics - Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques)- Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers – Natural rubber-	Elastomers – Natural rubber- compounding
	compounding and vulcanization -	and vulcanization – Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol – Applications of
	Thiokol and polyurethanes – Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	
	Fiber reinforced plastics – Biodegradable	
	polymers – Conducting polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels:-	UNIT - II: Fuel Technology: Fuels:-
	Introduction - Classification - Calorific	Introduction – Classification – Calorific
	value - HCV and LCV – Dulong's formula –	value - HCV and LCV – Dulong's formula –
	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis –
	- Coal — Proximate and ultimate analysis	Significance of the analyses – Liquid fuels –
	- Significance of the analyses - Liquid	Petroleum- Refining – Cracking – Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol –Petrol knocking – Diesel knocking -
	Synthetic petrol –Petrol knocking – Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents – Power alcohol – Bio-diesel –
	Anti-knock agents – Power alcohol – Bio-	Gaseous fuels – Natural gas. LPG and CNG –
	diesel – Gaseous fuels – Natural gas. LPG	Combustion – Calculation of air for the
	and CNG - Combustion - Calculation of	combustion of a fuel – Flue gas analysis –
	air for the combustion of a fuel – Flue gas	Orsat apparatus.

analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Introduction, classification, examples: RDX, TNT and ammonium nitrite - rocket fuels

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion:-Definition - Theories of Corrosion (electrochemical) - Formation of galvanic bv different metals. concentration cells, differential by aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating)

III: Electrochemical Cells Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses Standard electrodes this series-(Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition Theories of Corrosion (electrochemical) -Formation of galvanic cells by different metals, by concentration cells, differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Superconductors:- Type-I & Type-2, properties & applications Green synthesis:- Principles - 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction —
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors: -Type —
I, Type II — Characteristics and applications
Semiconductors: - Preparation of
semiconductors, working of diods and
transistors. Green synthesis: -Principles
Liquid crystals:-Introduction — Types —
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: SOLID STATE CHEMISTRY Types of solids - close packing of atoms and ions - BCC , FCC, structures of rock salt - cesium chloride- spinel - normal and inverse spinels, Non-elemental

UNIT - V: Non-Conventional Energy Sources: Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) – photovoltaic cell: design, semiconducting Materials:Stoichiometric, controlled valency &
Chalcogen photo/semiconductors,
Preparation of Semiconductors Semiconductor Devices:- p-n junction
diode as rectifier - junction transistor.
Insulators (electrical and electronic
applications) Magnetic materials:- Ferro
and ferri magnetism. Hall effect and its
applications.

working and its importance Non-conventional energy sources: (i)
Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introduction-schematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction- Design and working-movement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels.

UNIT VI: NON CONVENTIONAL ENERGY SOURCES AND STORAGE DEVICES Solar Energy: - Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) - photovoltaic cell: design, working and its importance Non-conventional energy sources: (i) Hydropower include setup a hydropower plant (schematic diagram) (ii) Geothermal energy: Introductionschematic diagram of a geothermal power plant (iii) Tidal and wave power: Introduction-Design and workingmovement of tides and their effect on sea level. (iv) Ocean thermal energy: Introduction, closed-cycle, ocean thermal energy conversion (OTEC), open cycle OTEC, hybrid OTEC, schematic diagram and explanation. (v) Biomass and biofuels Introduction cells:representation, H2-O2 fuel cell: Design and working, advantages and limitations. Types of fuel cells: Alkaline fuel cell methanol-oxygen - phosphoric acid fuel cells - molten carbonate fuel cells.

Signature of the course coordinator

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Signature of the HOD
Head of the Department
Department of H & BS
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Department of Computer Science and Engineering

Course Code RT32051 R1622051 R1622051 R1622051 UNIT-I: Introduction to Software Engineering: Software, Software Crisis, Software Engineering definition, Evolution of Software Engineering Methodologies, Software Engineering Challenges. Software Processes: Software Process, Process Classification, Phased development life cycle, Software Development Process Models- Process, use, applicability and Advantages/limitations Syllabus UNIT-II: Requirements Engineering: Software Engineering: Software Engineering: The Nature of Software Engineering: The Nature of WebApps, Software Engineering, Software Process, Software Engineering Practice, Software Improvement, Prescriptive Process Models, Specialized Process Models, The Unified Process Models, The Unified Process, Personal and Teat Process Models, Process Terminology, Product and Process. UNIT-II: Requirements Software Requirements engineering Process, Requirements Specification: Requirements and Analysis, Software Requirement	Regulation	Pre-Revision	Post-Revision
UNIT-I: Introduction to Software Engineering: Software, Software Crisis, Software Engineering definition, Evolution of Software Engineering Methodologies, Software Engineering Challenges. Software Processes: Software Process, Process Classification, Phased development life cycle, Software Development Process Models- Process, use, applicability and Advantages/limitations UNIT-II: Requirements Software Engineering: Software Engineering: The Nature of Software, The Unique Nature of WebApps, Software Engineering, Software Process, Software Engineering Practice, Software Process Models: A Generic Process Model, Process Assessment an Improvement, Prescriptive Process Models, Specialized Process Models, The Unified Process, Personal and Tea Process Models, Process Terminology, Product and Process. UNIT-II: Requirements Software Requirements Engineering: Software Advantages/limitations UNIT-II: Requirements Requirements Software Requirements Engineering: Software Advantages/limitations UNIT-II: Requirements Requirements Software Requirements Software Requirements Analysis And Specification: Requirements and Analysis, Software Requirement		Software Engineering	Software Engineering
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Software Processes: Software Process, Process Classification, Phased development life cycle, Software Development Process Models-Process, use, applicability and Advantages/limitations Syllabus UNIT-II: Requirements Software Requirements, Requirements engineering Process, Requirements Software Requirements Requirements Software Requirements and Analysis, Software Requirement Software Requirements Software Requirements Requirements Software Requirements Requirements Software Requirements Software Requirements Requirements Software Requirements			
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Requirements Software Requirements, Requirements engineering Process, Requirements Requirements Analysis And Specification: Requirements Gathering and Analysis, Software Requirement			
Software Requirements, Requirements specification: Requirements Gathering and Analysis, Software Requirement	Syllabus	TEACH CONTINUES CONSESSOR	
engineering Process, Requirements and Analysis, Software Requirement			
1: ': D ' A 1 '- (CDC) F1 Ct			
elicitation, Requirements Analysis, Specification (SRS), Formal System			
Structured Analysis, Data Oriented Specification. Software Design:			
Analysis, Object oriented Analysis, Overview of the Design Process, How			
			to Characterise of a Design?, Cohesion and Coupling, Layered Arrangement of
Specification, Requirements and Coupling, Layered Arrangement of Validation, requirement Management. Modules, Approaches to Software		1	
Design		vandation, requirement Management.	
UNIT-III: UNIT-III:		IINIT_III	
			Structured Analysis, Developing the
			3 , 1 0
			Review, over view of Object Oriented
Transform Vs Transaction Analysis. design.			

oriented Analysis and Desig	
Principles	Types of User Interfaces, Fundamentals
	of Component-based GUI Development, A User Interface Design Methodology.
TIMITE IN	UNIT-IV:
UNIT-IV:	
Implementation: Coding Principle	
Coding Process, Code verification	
Code documentation	8,
Software Testing: Testing Fundamentals, Test Planning, Black	0
Box Testing, White Box Testin	
Levels of Testing, Usability Testin Regression testing, Debuggir	
	Testing
approaches	Testing
UNIT-V:	UNIT-V:
Software Project Managemen	
Project Management Essentials, Wh	
is Project management, Softwa	
Configuration Management.	Software Quality Management System,
Project Planning and Estimation	
Project Planning activities, Softwa	
Metrics and measurements, Proje	
Size Estimation, Effort Estimation	
Techniques.	Life Cycle, Other Characteristics of
	Case Tools, Towards Second
	Generation CASE Tool, Architecture of
	a Case Environment
UNIT-VI	UNIT-VI
Software Quality: Software Quali	
Factors, Verification & Validation	
Software Quality Assurance, T	
Capability Maturity Model	Cost, Software Configuration
Software Maintenance: Software	and a second of the second of
maintenance, Maintenance Proce	
Models, Maintenance Co.	
Reengineering, Reengineering	
activities, Software Reuse.	Approach, Reuse at Organization Level.

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Organization	Computer Organization
Title	4 4	
Course	RT22054	R1622054
Code	<u> </u>	
Syllabus	UNIT-I: Basic Structure of Computers: Computer Types, Functional unit, Basic Operational concepts, Bus structures, Data Representation: Data types, Complements, Fixed Point Representation. Floating — Point Representation. Other Binary Codes, Error Detection codes. UNIT-II: Register Transfer Language and Microoperations: Register Transfer language. Register Transfer Bus and memory transfers, Arithmetic Micro	UNIT-I: Basic Structure Of Computers: Functional unit, Basic Operational concepts, Bus structures, System Software, Performance, The history of computer development. UNIT-II: Machine Instruction and Programs: Instruction and Instruction Sequencing: Register Transfer Notation, Assembly Language
	operations, logic micro operations, shift micro operations, Arithmetic logic shift unit. Basic Computer Organization and Design: Instruction codes, Computer Register Computer instructions, Timing and control, Instruction cycle, Memory – Reference Instructions. Input – Output and Interrupt, Design of basic computer, Design of Accumulator Logic.	Notation, Basic Instruction Types, Addressing Modes, Basic Input/output Operations, The role of Stacks and Queues in computer programming equation. Component of Instructions: Logic Instructions, shift and Rotate Instructions
	UNIT-III: Central Processing Unit : General	UNIT-III: Type of Instructions: Arithmetic and
		Logic Instructions, Branch Instructions,
	organization. Instruction formats.	
	Addressing modes. DATA Transfer	Operations
	and manipulation. Program control.	
	Reduced Instruction set	
	computer.Micro Programmed	

sequencing, micro program example,	- 1
design of control unit	
UNIT-IV: UNIT-IV:	
Computer Arithmetic: Addition and Input/Output Organization:	
subtraction, multiplication Accessing I/O Devices, Interru	ipts:
Algorithms, Division Algorithms, Interrupt Hardware, Enabling	and
Floating – point Arithmetic Disabling Interrupts, Handling	Multiple
operations. Decimal Arithmetic unit, Devices, Direct Memory Acce	ess,
Decimal Arithmetic operations. Buses: Synchronous Bus, Asynchronous Bus, Asynchronus Bus, Asynchronous Bus, Bus, Bus, Bus, Bus, Bus, Bus, Bu	nchronous
Bus, Interface Circuits, Standa	ard I/O
Interface: Peripheral Compone	ent
Interconnect (PCI) Bus, Unive	ersal Serial
Bus (USB)	
UNIT-V: UNIT-V:	
The Memory System : Memory The Memory Systems: Basi	c memory
Hierarchy, Main memory, Auxiliary circuits, Memory System Con	sideration,
memory, Associative Memory, Cache Read-	
Memory, Virtual Memory. Only Memory: ROM, PROM	, EPROM,
EEPROM, Flash Memory,	
Cache Memories: Mapping	Functions,
INTERLEAVING	
Secondary Storage: Magn	etic Hard
Disks, Optical Disks,	
UNIT-VI UNIT-VI	
Input-Output Organization : Peripheral Processing Unit: Fu	indamental
Devices, Input-Output Interface, Concepts: Register	Transfers,
Asynchronous data transfer, Modes of Performing An Arithmetic	Or Logic
Transfer, Priority Interrupts, Direct Operation, Fetching A W	ord From
memory Access. Memory, Execution of	Complete
Multi Processors :Introduction, Instruction, Hardwired Cont	rol, Micro
Characteristics or Multiprocessors, programmed Control: Microin	structions,
Interconnection Structures, Inter Micro program Sequencia	
processor Arbitration. Branch Addressing Microin	nstructions
with next –Address Field	

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Department of Computer Science and Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course		
Title	Advanced Data Structures Lab	Advanced Data Structures Lab
Course	RT22056	R1622057
Code	2.02	at the second of the second of
Syllabus	1. To perform various operations i.e., insertions and deletions on AVL trees. 2. To implement operations on binary heap. i) Vertex insertion ii) Vertex deletion iii) Finding vertex iv) Edge addition and deletion 3. To implement Prim's algorithm to generate a min-cost spanning tree. 4. To implement Krushkal's algorithm to generate a min-cost spanning tree. 5. To implement Dijkstra's algorithm to find shortest path in the graph. 6. To implementation of Static Hashing (Use Linear probing for collision resolution) 7. To implement of Huffmann coding. 8. To implement of B-tree.	1. To implement functions of Dictionary using Hashing (division method, Multiplication method, Universal hashing) 2. To perform various operations i.e, insertions and deletions on AVL trees 3. To perform various operations i.e., insertions and deletions on 2-3 trees. 4. To implement operations on binary heap. 5. To implement operations on graphs i) vertex insertion ii) Vertex deletion iii) finding vertex iv)Edge addition and deletion 6. To implement Depth First Search for a graph non recursively. 7. To implement Breadth First Search for a graph non recursively. 8. To implement Prim's algorithm to generate a min-cost spanning tree. 9. To implement Krushkal's algorithm to generate a min-cost spanning tree. 10. To implement Dijkstra's algorithm to find shortest path in the graph. 11. To implement pattern matching using Boyer-Moore algorithm. 12. To implement Knuth-Morris-Pratt algorithm for pattern matching.

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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course Title	Mathematics – II	Mathematics – II
Course Code	R161110	171BS1T02
	UNIT-I:	UNIT-I:
	Solution of Algebraic and Transcendental Equations: Introduction- Bisection method – Method of false position – Iteration method – Newton-Raphson method (One variable and simultaneous Equations).	Solution of Algebraic and Transcendental Equations and Interpolation: Introduction- Bisection method – Method of false position – Iteration method – Newton - Raphson method. Errors in polynomial interpolation – Finite differences-Forward differences-Backward differences – Central differences – Relation between operators – Differences of a polynomial-Newton's formulae for interpolation – Interpolation with unequal intervals – Lagrange's interpolation formula.
	UNIT-II:	UNIT-II:
Syllabus	Interpolation: Introduction- Errors in polynomial interpolation – Finite differences-Forward differences- Backward differences – Central differences – Symbolic relations and separation of symbols - Differences of a polynomial-Newton's formulae for interpolation – Interpolation with unequal intervals - Lagrange's interpolation formula.	Numerical Integration and solution of Ordinary Differential equations: Trapezoidal rule- Simpson's 1/3rd and 3/8th rule-Solution of ordinary differential equations by Taylor's series-Picard's method of successive approximations-Euler's method, Modified Euler's method – Runge - Kutta method (fourth order).

UNIT-III UNIT-III: Numerical Integration and solution of Fourier Series: Fourier series of Differential periodic function - Dirichlet's Ordinary equations: Trapezoidal rule-Simpson's 1/3rd and conditions for Fourier expansion -3/8th rule-Solution of ordinary Functions having points of differential equations by Taylor's discontinuities-Change of interval series-Picard's method of successive Even and odd functions - Half-range approximations-Euler's method series. Runge-Kutta method (second and fourth order). **UNIT-IV: UNIT-IV: Fourier Series:** Fourier Transforms: Fourier integral Introduction- Periodic functions theorem (without proof) - Fourier sine Fourier series of -periodic function and cosine integrals - sine and cosine Dirichlet's conditions -Even and odd transforms - properties - inverse functions - Change of interval - Halftransforms - Finite Fourier transforms. range sine and cosine series. **UNIT-V: Applications of PDE: UNIT-V** Applications of Partial Method of separation of Variables-Differential Equations: Classification Solution of One-dimensional Wave, of Higher order P.D.E - Method of Heat and two-dimensional Laplace separation of Variables-Solution of equation. One-dimensional Wave equation, Heat equation and two-dimensional Laplace

equation

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Regulation	Pre-Revision	Post-Revision
Course	Applied Physics	Applied Physics
Title	•	•
Course	R161104	171BS1T04
Code		
	UNIT-I:	UNIT-I:
	INTERFERENCE: Principle of Superposition—Coherent Sources—Interference in thin films (reflection geometry)—Newton's rings—construction and basic principle of Interferometers.	Interference: Principle of Superposition – Coherence– Interference in thin films (reflection geometry) – Newton's rings – construction and working principle of Interferometer.
	UNIT-II:	UNIT-II:
	DIFFRACTION: Fraunhofer diffraction at single slit - Cases of double slit, N-slits & Circular Aperture (Qualitative treatment only)-Grating equation - Resolving power of a grating, Telescope and Microscopes	Diffraction: Fraunhofer diffraction at single slit – Cases of double slit, N-slits, & circular aperture, Grating equation – Rayleigh criterion of resolving power-Resolving power of a grating, Telescope and Microscopes
	UNIT-III	UNIT-III
Syllabus	POLARIZATION: Types of Polarization – Methods of production – Nicol Prism -Quarter wave plate and Half Wave plate – Working principle of Polarimeter (Sacharimeter). LASERS: Characteristics– Stimulated emission – Einstein's Transition Probabilities- Pumping schemes – Ruby laser – Helium Neon laser. UNIT-IV:	Polarization: Types of Polarization – Methods of production – Nicol Prism – Quarter wave plate and Half Wave plateworking principle of polarimeter (Sacharimeter). LASERS: Characteristics— Stimulated emission – Einstein's Transition Probabilities-Pumping schemes- Ruby laser – Helium Neon laser-CO2 Laser-Applications UNIT-IV:
	ELECTROMAGNETIC FIELDS: Scalar and Vector Fields – Electric Potential-Gradient, Divergence of	Quantum Mechanics: Introduction – Matter waves – Schrödinger Time Independent and Time Dependent wave equations – Particle in a box. FREE

fields - Gauss and Stokes theorems-	ELECTRON THEORY: Defects of
Propagation of EM waves	classical free electron theory -Quantum
through dielectric medium.	Free electron theory – concept of Fermi
	Energy.
UNIT-V:	UNIT-V:
Quantum Mechanics: Introduction -	Band Theory of Solids: Bloch's
Matter waves – Schröedinger Time	theorem (qualitative) – Kronig – Penney
Independent and Time Dependent	model (Qualitative) – energy bandsin
wave equations – Particle in a box.	crystalline solids - classification of
FREE ELECTRON THEORY:	crystalline solids- effective mass of
Defects of Classical free electron	electron & concept of hole.
theory –Quantum	Semiconductor Physics: Conduction –
Free electron theory - concept of Fermi	Density of carriers in Intrinsic and
Energy.	Extrinsic semiconductors - Drift &
2	Diffusion – relevance of Einstein's
	equation- Hall effect in semiconductors.

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Department of Information Technology

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	English Communication Skills Lab – I	English Communication Skills Lab - I
Title		
Course	R161114	171HS1L01
Code		
1	UNIT-I:	UNIT-I:
	1. WHY study Spoken English?	A. Greeting, Introducing and taking
	2. Making Inqueries on the phone,	leave
	thanking and responding to Thanks	B. Pure Vowels
	Practice work.	
	UNIT-II:	UNIT-II:
	1. Responding to Requests and asking	A. Giving Information and Asking for
	for Directions	Information
	Practice work.	B. Diphthongs
	UNIT-III	UNIT-III:
	1. Asking for Clarifications, Inviting,	A. Inviting, Accepting and Declining
	Expressing Sympathy, Congratulating	Invitations
	2. Apologising, Advising, Suggesting,	B. Consonants
	Agreeing and Disagreeing	
	Practice work.	
	***************************************	***************************************
	UNIT-IV:	UNIT-IV:
C. II. L	1. Letters and Sounds	A. Commands, Instructions and
Syllabus	Practice work.	Requests
		B. Accent and Rhythm
	UNIT-V:	UNIT-V:
	1. The Sounds of English	A. Suggestions and Opinions
	Practice work.	B. Intonation

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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title	•	
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics	Exercise - 1
	a) What is an OS Command,	Introduction to C Programming
	Familiarization of Editors - vi, Emacs	1.1) Introduction about Editors –Turbo,
	b) Using commands like mkdir, ls, cp,	vi, Emacs
	mv, cat, pwd, and man	1.2) C Program to Perform Addition,
	c) C Program to Perform Adding,	Subtraction, Multiplication and Division
	Subtraction, Multiplication and	of two numbers from Command line
	Division of two numbers From	1.3) Write a C Program to Calculate area
-	Command line	of a Triangle using Heron's formula.
	Exercise - 2 Basic Math	Exercise – 2:
	a) Write a C Program to Simulate 3	Basic Math
	Laws at Motion	2.1) Write a C Program to Find Whether
Syllabus	b) Write a C Program to convert	the Given Year is a Leap Year or not.
	Celsius to Fahrenheit and vice versa	2.2) Write a C Program to convert
		Celsius to Fahrenheit and vice versa.
		2.3) Write a C Program to find largest
	E	of three numbers using ternary operator.
	Exercise - 3 Control Flow - I	Exercise – 3:
	a) Write a C Program to Find Whether	Control Flow - I
	the Given Year is a Leap Year or not.	3.1) Write a C program to find the roots of a Quadratic Equation.
	b) Write a C Program to Add Digits & Multiplication of a number	3.2) Write a C Program to make a simple
	Multiplication of a number	Calculator to Add, Subtract, Multiply or
		Divide Using switchcase.
		3.3) Scenario - 1 ATM PIN
		GENERATION:
		Aditya purchased a credit card. He has to
		generate a PIN number to access the
		ATM and Net banking for which OTP
		was sent to his registered mobile
		number. Using this OTP number he has
		to generate ATM PIN number. After
	L	5 State I I I I I I I I I I I I I I I I I I I

	generating PIN number, he can use it for further transactions. Maximum login he
	can make is 3 times. Sample Input: OTP: 6732 If valid Enter PIN: 8858 Confirm your PIN: 8858 Sample output: valid/Invalid PIN generated successfully. Note: OTP is hard coded. 3.4) Scenario - 2 RESET PASSWORD: Sindhuja was using Syndicate Bank's Online Account. She wanted to pay her bills through Online. But she forget her password. Now she has to reset the password. For resetting the password, she has to select reset option from the Menu. NOTE: using switch case. Sample input: 1. Fast withdrawal 2. Mini Statement. 3. Balance Enquiry 4. Reset Password Enter your choice: 4 Sample Output: Reset password: New password: ***** Confirm password: *****
Exercise – 4 Control Flow - II a) Write a C Program to Find Whether the Given Number is i) Prime Number ii) Armstrong Number b) Write a C program to print Floyd Triangle c) Write a C Program to print Pascal Triangle Exercise – 5 Functions a) Write a C Program demonstrating of parameter passing in Functions and	Exercise –4: Control Flow - II 4.1) Write a C Program to Find Whether the Given Number is i) Prime Number ii) Armstrong Number 4.2) Write a C program to print Floyd Triangle 4.3) Write a C Program to print Pascal Triangle Exercise – 5: Control Flow – III 5.1) Write a C program to find the sum

	b) Write a C Program illustrating	5.2) Write a C program to check
	Fibonacci, Factorial with Recursion	whether given number is palindrome or
	without Recursion.	not.
		5.3) Write a C program to read two
		numbers, x and n, and then compute the
		sum of the geometric progression
		$1+x+x^2+x^3++x^n$
		5.4) Scenario - 3 Student Attendance
		report Generation:
		Some of the school staff had failed to
		maintain the attendance of the students,
		causing lack of essential records related
		to students attendance that should be
		submitted in a parents meet. The school
		management has decided to automate
		the process in order to maintain the
		attendance of every student effectively.
	1.6	You are asked to write a program to the
	9	above scenario and display whether the
		student is allowed to write the Exam or
		not.
Qu'en p	Exercise – 6 Control Flow - III	Exercise 6:
	a) Write a C Program to make a simple	Arrays
	Calculator to Add, Subtract, Multiply	Demonstration of arrays
	or Divide Using	6.1) Linear Search.
	switchcase	6.2) Bubble Sort.
	b) Write a C Program to convert	6.3) Operations on Matrix.
	decimal to binary and hex (using	6.4) Scenario – 4 Celebrity of the Week:
	switch call function the	Red FM has launched a program called
	function)	Celebrity of the week in their channel.
	Tunetion)	Listeners are given a toll free number
	F I	where they can listen to list of
		celebrities. Listeners can choose their
	2 2	
		favourite celebrity from the list and vote
		for him/her. The votes are validated
		from Monday to Saturday. The one with
		highest votes is called as "Celebrity of
		the Week" and his/her songs are played
	÷	in the program, which is aired on
		Sundays. Now write a program to find
	9 1	the celebrity of the week.
	Exercise – 7 Functions - Continued	Exercise – 7:
	Write a C Program to compute the	Functions
	values of sin x and cos x and e^x values	7.1) Write a C Program to demonstrate
	using Series	parameter passing in Functions and
	expansion. (use factorial function)	returning values.
	expansion. (use factorial function)	returning values.

	7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario – 5 SELF DRIVE RENTAL Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT, In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km. In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km. In XL, 15 kms are free for one
Exercise – 8 Arrays Demonstration of arrays a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km. Exercise – 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario – 6 Word with Obesity:

	•	Jeeth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
	Exercises - 9 Structures a) Write a C Program to Store Information of a Movie Using Structure b) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	Exercise – 9: Arrays and Pointers 9.1) Write a C Program to Access Elements of an Array Using Pointer 9.2) Write a C Program to find the sum of numbers with arrays and pointers.
	Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	Exercise – 10: Dynamic Memory Allocations 10.1) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc () function. 10.2) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function. Understand the difference between the above two programs
	Exercise – 11 Dynamic Memory Allocations a) Write a C program to find sum of n elements entered by user. To perform this program,	Exercises – 11: Structures: 11.1) Write a C Program to Store Information of a book Using Structure

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs

11.2) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date = 5

Late fee per day = Rs. 50Fine paid by the student is 5 * 50 = 250.

Exercise – 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

	T	F2 22 7 - 2 7 7 - 2 7
		2. Update Existing Student
	+	3. Delete Existing Student
		4. Retrieve A Particular/All Students
-		Sample Input:
		Choose the task you want to perform:
		1. Add 2. Update 3. Delete 4. Retrieve
		Your choice: 1 Enter student details:
		Name: Akhil Age: 5 Class: 1
		Sample Output: Student details added
	Exercise -13 Files	
	a)Write a C programming code to open	
	a file and to print it contents on screen.	•
a la	b)Write a C program to copy files	
	Exercise - 14 Files Continued	
	a) Write a C program merges two files	
	and stores their contents in another file.	
	b) Write a C program to delete a file.	
	Exercise – 15	
	a) System Assembling, Disassembling	
	and identification of Parts /	2
	Peripherals. b) Operating System	
	Installation-Install Operating Systems	
	like Windows, Linux along with	
	necessaryDevice Drivers.	
	Exercise – 16	
	a) MS-Office / Open Office	
12	i) Word - Formatting, Page Borders,	
	Reviewing, Equations, symbols. ii)	
	SpreadSheet - organize data, usage of	
	formula, graphs, charts.	
	iii) Powerpoint - features of power	>
	point, guidelines for preparing an	*
	effective presentation.	
	b) Network Configuration & Software	
	Installation-Configuring TCP/IP,	
	Proxy, and firewallsettings. Installing	
	application software, system software	
	& tools.	

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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course	Mathematics – III	Mathematics – III
Title	•	
Course	R161201	171BS2T06
Code		
	UNIT-I:	UNIT-I:
	Linear systems of equations:	Laplace transforms: Laplace transforms
	Rank-Echelon form-Normal form -	of standard functions-First Shifting
	Solution of linear systems - Gauss	theorem, Change of scale,
	elimination - Gauss	Multiplication with t, Division by t -
	Jordon- Gauss Jacobi and Gauss Seidal	Transforms of derivatives and integrals
	methods.Applications: Finding the	- Unit step function - Dirac's delta
	current in electrical	function, Periodic functions.
	circuits.	
	UNIT-II:	UNIT-II:
	Eigen values - Eigen vectors-	Inverse Laplace Transforms: Inverse
	Properties - Cayley-Hamilton theorem	Laplace transforms – Convolution
	- Inverse and powers of a matrix by	theorem (with out proof), Second
Syllabus	using Cayley-Hamilton theorem-	shifting theorem.
	Diagonalization- Quadratic forms-	*(MATLAB Exercise: Computing
	Reduction of quadratic form to	Laplace transform of f(t) using
	canonical form - Rank - Positive,	symbolic toolbox, Solving initial value
	negative and semi definite - Index -	problems using 'dsolve')
	Signature.	Applications: Evaluating improper
	Applications: Free vibration of a two-	integrals, solving initial value problems
	mass system.	using Laplace transforms.
	UNIT-III:	UNIT-III:
		Multiple integrals and Beta, Gamma
	Curve tracing: Cartesian, Polar and	functions: Multiple integrals: Double
	Parametric forms.	and triple integrals – Change of variables
	Multiple integrals: Double and triple	- Change of order of integration, Beta
	integrals - Change of variables -	and Gamma functions- Properties -
	Change of order of	Relation between Beta and Gamma
	integration.	functions-
	Applications: Finding Areas and	Applications: Finding Areas and
	Volumes.	Volumes.

	UNIT-IV:	UNIT-IV:
	Beta and Gamma functions- Properties - Relation between Beta and Gamma functions- Evaluation of improper integrals. Applications: Evaluation of integrals.	Vector Differentiation: Gradient - Directional Derivatives - Divergence- Curl - Laplacian operator -Vector identities. Applications: Equation of continuity, potential surfaces
•	UNIT-V: . Gradient- Divergence- Curl - Laplacian and second order operators - Vector identities. Applications: Equation of continuity, potential surfaces	UNIT-V: Vector Integration: Line integral — Work done - Surface and volume integrals, Green's Theorem, Stokes Theorem and Gauss Divergence theorem (without proof) and related problems.
	UNIT VI: Vector Integration: Line integral – Work done – Potential function – Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course	Environmental Studies	Environmental Studies
Title		
Course	R161203	171HS2T02
Code		F
Syllabus	UNIT-I: Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession Food chains, food webs and ecological pyramids Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystems. UNIT-II:	UNIT-I: Ecosystems: Scope of environmental studies, Structure- Producers, consumers and decomposers Function – Food chain, Food web, Tropic structure and Energy flow in the ecosystem Ecological pyramids, nutrient recycling, primary and secondary production, ecosystem regulation. Ecological succession Terrestrial ecosystem and aquatic ecosystem - Introduction, types, characteristic features.
	Forest resources – Use and over – exploitation, deforestation – Timber	Natural Resources: Natural resources and associated problems Forest
	extraction - Mining, dams and other	resources – Use and over – exploitation,
	effects on forest and tribal people	deforestation – Timber extraction –
	Water resources – Use and over	Mining, dams and other effects on
	utilization of surface and ground water	forest and tribal people Water

Floods, drought, conflicts over water, dams - benefits and problems Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activities-effects of modern fertilizer-pesticide agriculture, problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction.

Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

resources - Use and over utilization of surface and ground water - Floods, drought, conflicts over water, dams benefits and problems Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources Food resources: World food problems, changes caused by non-agriculture activities-effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT-III:

Definition: genetic, species and ecosystem diversity- classification - Value of biodiversity: consumptive productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India - Conservation of biodiversity: conservation of biodiversity.

UNIT-IV:

Environmental Pollution: Definition, Cause, effects and control measures of Airpollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies.

UNIT-III:

Biodiversity and its conservation:
Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity.

UNIT-IV:

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Style.

Impact of Fire Crackers on Men and Solid Waste Management: Sources, effects his well being. Classification, and measures of urban and industrial solid Solid Waste Management: Sources, Classification, effects and control wastes. Consumerism and waste measures of urban and industrial solid products, Biomedical, Hazardous and e waste management. wastes. Consumerism and waste products, Biomedical, Hazardous and e – waste management. **UNIT-V**: UNIT-V: Social Issues and the Environment: Social Issues and the Environment: Urban problems related to energy -Urban problems related to energy -Water conservation. rain Water conservation. rain water water harvesting-Resettlement harvesting-Resettlement and rehabilitation of people; its problems rehabilitation of people; its problems and concerns. Environmental ethics: and concerns. Global challenges Environmental and possible solutions. ethics: Issues Environmental Protection Act - Air possible solutions. Environmental (Prevention and Control of Pollution) Protection Act -Air (Prevention and Control of Pollution) Act. -Water Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection Act (Prevention and control of Pollution) Act -Wildlife Protection Act - Forest -Forest Conservation Act-Issues Conservation Act-Issues involved in involved enforcement in environmental legislation. -Public enforcement of environmental legislation. - Public awareness and awareness. Environmental management **UNIT-VI** Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and Environmental audit. Ecotourism. Green Campus - Green business and Green politics. The student should Visit an Industry / Ecosystem and submit a report individually on any related to Environmental Studies course and make a power point presentation.

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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course	Applied Chemistry	Applied Chemistry
Title		•
Course	R161211	171BS2T05
Code	- I	
Syllabus	UNIT-I: HIGH POLYMERS AND PLASTICS Polymerisation : Introduction- Mechanism of polymerization - Stereo regular polymers — methods of polymerization (emulsion and suspension) -Physical and mechanical properties — Plastics as engineering materials: advantages and limitations — Thermoplastics and Thermosetting plastics — Compounding and fabrication (4/5 techniques)- Preparation, properties and applications of polyethene, PVC, Bakelite Teflon and polycarbonates Elastomers — Natural rubber- compounding and vulcanization — Synthetic rubbers: Buna S, Buna N, Thiokol and polyurethanes — Applications of elastomers. Composite materials & Fiber reinforced plastics — Biodegradable polymers — Conducting polymers. UNIT-II: Fuels:- Introduction — Classification — Calorific value - HCV and LCV —	
	Dulong's formula – Bomb calorimeter – Numerical problems – Coal —	Fuels:- Introduction – Classification – Calorific value - HCV and LCV –
	Proximate and ultimate analysis –	Dulong's formula – Coal — Proximate
	Significance of the analyses – Liquid	and ultimate analysis – Significance of
	fuels – Petroleum- Refining –	the analyses – Liquid fuels –
	racio renotedin itelining -	the analyses Eliquid fuels –

Cracking – Synthetic petrol –Petrol knocking – Diesel knocking - Octane and Cetane ratings – Anti-knock agents – Power alcohol – Bio-diesel – Gaseous fuels – Natural gas. LPG and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus – Numerical problems on combustion.

Explosives:- Introduction, classification, examples: RDX, TNT and ammonium nitrite – rocket fuels.

Petroleum- Refining – Cracking –
Synthetic petrol –Petrol knocking –
Diesel knocking - Octane and Cetane
ratings – Anti-knock agents – Power
alcohol – Bio-diesel – Gaseous fuels –
Natural gas. LPG and CNG –
Combustion – Calculation of air for the
combustion of a fuel – Flue gas analysis
– Orsat apparatus.

UNIT-III:

Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) - Concentration Cells - Batteries: Dry Cell - Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells.

Corrosion:- Definition - Theories of

Corrosion:- Definition – Theories of Corrosion (electrochemical) – Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion – Passivity of metals – Pitting corrosion - Galvanic series – Factors which influence the rate of corrosion – Protection from corrosion – Design and material selection – Cathodic protection -

Protective coatings: – Surface preparation – Metallic (cathodic and anodic) coatings – Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating)

UNIT-IV:

Nano materials:- Introduction - Solgel method & chemical reduction

UNIT-III:

Electrochemical Cells And Corrosion:
Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) - Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells.
Corrosion:- Definition - Theories of

Corrosion (electrochemical) – Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion – Passivity of metals – Pitting corrosion - Galvanic series – Factors which influence the rate of corrosion - Protection from corrosion – Cathodic protection - Protective coatings: – Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT-IV:

Chemistry of Advanced Materials:

preparation Nano materials:-Introduction - Sol-gel method of Characterization by BET method and method - Carbon nano tubes and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications. Super Types, preparation, fullerenes: conductors:-Type -I, Type II properties and applications Liquid crystals:- Introduction - Types Characteristics and applications Semi **Applications** Superconductors conductors:- Preparation of Type-I Type-2, semiconductors, working of diods and properties &applications Green synthesis:transistors. Principles - 3 or 4 methods of synthesis Green synthesis:-Principles Liquid with examples - R4M4 principles crystals:-Introduction - Types -Applications Fuel cells:- Introduction cell representation, H2-O2fuel cell: Design and working, advantages and Limitations. Types of fuel cells: methanol-oxygen fuel cells. UNIT-V: **UNIT-V:** Types of solids - close packing of **Non Conventional Energy Sources:** atoms and ions - BCC, FCC, structures Solar Energy: - Introduction, of rock salt - cesium chloride- spinel application of solar energy, conversion normal and inverse spinels, of solar energy (Thermal conversion & Non-elemental semiconducting photo conversion) – photovoltaic cell: Materials:- Stoichiometric, controlled design, working and its importance valency Chalcogen Non-conventional energy sources: & photo/semiconductors, Preparation of Semiconductors Semiconductor Devices:- p-n junction diode as rectifier - junction transistor. Insulators (electrical and electronic applications) Magnetic materials:-Ferro and ferri magnetism. Hall effect and its applications. UNIT VI: Non Conventional Energy Sources And Storage Devices Solar Energy: Introduction, application of solar energy, conversion of solar energy (Thermal conversion & photo conversion) - photovoltaic cell: design, working and its importance Non-conventional energy sources: (i) Hydropower include setup a

hydropower plant (schematic diagram)

(ii) Geothermal energy: Introduction-	s 0-
schematic diagram of a geothermal	L
power plant	
(iii) Tidal and wave power:	
Introduction- Design and working-	
movement of tides and	
their effect on sea level.	
(iv) Ocean thermal energy:	
Introduction, closed-cycle, ocean	4
thermal energy conversion (OTEC),	30
open cycle OTEC, hybrid OTEC,	
schematic diagram and explanation.	**
(v) Biomass and biofuels	
Fuel cells:- Introduction - cell	
representation, H2-O2 fuel cell:	
Design and working, advantages and	
limitations. Types of fuel cells:	
Alkaline fuel cell - methanol-oxygen -	
phosphoric acid fuel cells - molten	
carbonate fuel cells.	W
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Department of Information Technology

Regulation	Pre-Revision	Post-Revision
Course Title	Software Engineering	Software Engineering
Course Code	RT32051	R1622051
	UNIT-I: Introduction to Software Engineering: Software, Software Crisis, Software Engineering definition, Evolution of Software Engineering Methodologies, Software Engineering Challenges. Software Processes: Software Process, Process Classification, Phased development life cycle, Software Development Process Models- Process, use, applicability and Advantages/limitations	UNIT-I: Software and Software Engineering: The Nature of Software, The Unique Nature of WebApps, Software Engineering, Software Process, Software Engineering Practice, Software Myths. Process Models: A Generic Process Model, Process Assessment and Improvement, Prescriptive Process Models, Specialized Process Models, The Unified Process, Personal and Team
Syllabus	UNIT-II: Requirements Engineering: Software Requirements, Requirements engineering Process, Requirements elicitation, Requirements Analysis, Structured Analysis, Data Oriented Analysis, Object oriented Analysis, Prototyping Analysis, Requirements Specification, Requirements Validation, requirement Management.	Process Models, Process Terminology, Product and Process. UNIT-II: Requirements Analysis And Specification: Requirements Gathering and Analysis, Software Requirement Specification (SRS), Formal System Specification. Software Design: Overview of the Design Process, How to Characterise of a Design?, Cohesion and Coupling, Layered Arrangement of Modules, Approaches to Software Design
	UNIT-III: Software Design: Software Design Process, Characteristics of Good Software Design, Design Principles, Modular Design, Design Methodologies, Structured Design, Structured Design Methodology, Transform Vs Transaction Analysis.	UNIT-III:

Object-Oriented Design: Object oriented Analysis and Design Principles UNIT-IV: Implementation: Coding Principles, Coding Process, Code verification, Code documentation Software Testing: Testing Fundamentals, Test Planning, Black Box Testing, White Box Testing, Levels of Testing, Usability Testing, Regression testing, Debugging approaches	User Interface Design: Characteristics of Good User Interface, Basic Concepts, Types of User Interfaces, Fundamentals of Component-based GUI Development, A User Interface Design Methodology. UNIT-IV: Coding And Testing: Coding, Code Review, Software Documentation, Testing, Unit Testing, Black-Box Testing, White-Box Testing, Debugging, Program Analysis Tool, Integration Testing, Testing Object-Oriented Programs, System Testing, Some General Issues Associated with Testing
UNIT-V: Software Project Management: Project Management Essentials, What is Project management, Software Configuration Management. Project Planning and Estimation: Project Planning activities, Software Metrics and measurements, Project Size Estimation, Effort Estimation Techniques.	UNIT-V: Software Reliability And Quality Management: Software Reliability, Statistical Testing, Software Quality, Software Quality Management System, ISO 9000, SEI Capability Maturity Model. Computer Aided Software Engineering: Case and its Scope, Case Environment, Case Support in Software Life Cycle, Other Characteristics of Case Tools, Towards Second Generation CASE Tool, Architecture of a Case Environment
UNIT-VI Software Quality: Software Quality Factors, Verification & Validation, Software Quality Assurance, The Capability Maturity Model Software Maintenance: Software maintenance, Maintenance Process Models, Maintenance Cost, Reengineering, Reengineering activities, Software Reuse.	UNIT-VI Software Maintenance: Software maintenance, Maintenance Process

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Department of Petroleum Technology

Syllabus revision Index 2017-2018

S.No	Name of the course	Percentage of syllabus change
1.	English-I	65%
2.	English Communication Skills Lab-I	10%
3.	English-II	55%
4.	English Communication Skills Lab-II	40%
5.	Mathematics-I	40%
6.	Mathematics-II	10%
7.	Mathematics-III	40%
8.	Engineering Chemistry	25%
9.	Engineering Chemistry Lab	20%
10.	Computer Programming Lab	40%
11.	Engineering Physics	25%
12.	Engineering Physics Lab	10%
13.	Environmental Studies	20%
14.	Process Heat Transfer	10%
15.	Probability & Statistics	30%

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	 Pre-Revision 	Post-Revision
Course	English-II	English-I ·
Title		
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW-
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	- E
	Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. ' The Chief Software Architect'	
	from English Encounters	
	2. ' Srinivasa Ramanujan' from The Great	
	Indian Scientists.	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	English Communication Skills Lab -I	English Communication Skills Lab -I
Title	V-7	
Course	R161114	171HS1L01
Code		
	UNIT 1: 1. WHY study Spoken English?	PRACTICE 1: A. Greeting, Introducing and
	2. Making Inqueries on the phone,	taking leave
	thanking and responding to Thanks	B. Pure Vowels
	Practice work.	
	UNIT 2: 1. Responding to Requests and	PRACTICE 2: A. Giving Information and
	asking for Directions	Asking for Information
	Practice work.	B. Diphthongs
	UNIT 3: 1. Asking for Clarifications,	PRACTICE 3: A. Inviting, Accepting and
	Inviting, Expressing Sympathy,	Declining Invitations
	Congratulating 2. Apologising, Advising,	B. Consonants
	Suggesting, Agreeing and Disagreeing	
	Practice work.	
	UNIT 4: 1. Letters and Sounds	PRACTICE 4: A. Commands, Instructions
	Practice work.	and Requests
		B. Accent and Rhythm
	UNIT 5: 1. The Sounds of English	PRACTICE 5: A. Suggestions and Opinions
	Practice work.	B. Intonation
Syllabus		
	UNIT 6: 1. Pronunciation 2. Stress and	
	Intonation	
	Practice work	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English -I	English-II
Course Code	R161101	171HS2T03
	UNIT I: 1. 'Human Resources' from English for Engineers and Technologists. 2. 'An Ideal Family' from Panorama: A Course on Reading UNIT 2: 1. ' Transport: Problems and	UNIT-I: I. TECHNOLOGY WITH A HUMAN FACE (Detailed) 2. AN IDEAL FAMILY (Non-Detailed) UNIT-II: I. CLIMATE CHANGE AND
	Solutions' from English for Engineers and Technologists. 2: 'War' from 'Panorama : A Course on Reading'	HUMAN STRATEGY (Detailed) 2. WAR (Non-Detailed)
	UNIT 3: 1. 'Evaluating Technology' from English for Engineers and Technologists. 2. 'The Verger' from 'Panorama : A Course on Reading	UNIT-III: 1. EMERGING TECHNOLOGIES (Detailed) 2. THE VERGER (Non-Detailed)
	UNIT 4: 1. 'Alternative Sources of Energy' from English for Engineers and Technologists. 2. ' The Scarecrow' from Panorama : A	UNIT-IV: 1. THE SECRET OF WORK (Detailed) 2. THE SCARECROW (Non-Detailed)
Syllabus	Course on Reading UNIT 5: 1. 'Our Living Environment' from English for Engineers and Technologists. 2. 'A Village Host to Nation' from Panorama: A Course on Reading	UNIT-V: 1. WORK BRINGS SOLACE (Detailed) 2. A VILLAGE LOST TO THE NATION (Non-Detailed)
	UNIT 6: 1. ' Safety and Training' from English for Engineers and Technologists. 2. 'Martin Luther King and Africa' from Panorama: A Course on Reading	

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Department of Humanities & Basic Sciences

· 1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Engineering Chemistry	Engineering Chemistry
Title		
Course	R161105	171BS1T03
Code		
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT- I: High Polymers and Plastics:
	Polymerisation:- Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
	regular polymers - methods of	- Physical and mechanical properties –
Syllabus	polymerization (emulsion and	Plastics as engineering materials:
	suspension) -Physical and mechanical	advantages and limitations -
	properties - Plastics as engineering	Thermoplastics and Thermosetting plastics
	materials : advantages and limitations -	 Compounding and fabrication
	Thermoplastics and Thermosetting	(compression moulding, injection
	plastics - Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques) - Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers :- Natural rubber-	Elastomers – Natural rubber- compounding
	compounding and vulcanization -	and vulcanization – Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol – Applications of
	Thiokol and polyurethanes – Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	
	Fiber reinforced plastics – Biodegradable	
	polymers - Conducting polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels -	UNIT - II: Fuel Technology: Fuels:-
	Introduction - Classification - Calorific	Introduction – Classification – Calorific
	value - HCV and LCV - Dulong's formula -	value - HCV and LCV - Dulong's formula -
	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis –
	- Coal — Proximate and ultimate analysis	Significance of the analyses – Liquid fuels –
	- Significance of the analyses - Liquid	Petroleum- Refining - Cracking - Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol -Petrol knocking - Diesel knocking -
	Synthetic petrol –Petrol knocking – Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents – Power alcohol – Bio-diesel –
	Anti-knock agents – Power alcohol – Bio-	Gaseous fuels – Natural gas. LPG and CNG –
	diesel – Gaseous fuels – Natural gas, LPG	Combustion – Calculation of air for the

and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Rocket fuels

combustion of a fuel – Flue gas analysis – Orsat apparatus.

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion :-Definition - Theories of Corrosion (chemical & electrochemical) - Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Electroplating, Electroless Tinning, plating).

UNIT - III: Electrochemical Cells Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses this series-Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) -Formation of galvanic cells by different metals, by concentration cells, differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Super conductors:-Type –I, Type II – Characteristics and applications Green synthesis:- Principles - 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction —
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors:-Type —
I, Type II — Characteristics and applications
Semi conductors: - Preparation of
semiconductors, working of diodes and
transistors. Green synthesis:-Principles
Liquid crystals:-Introduction — Types —
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: WATER TECHNOLOGY Hard water:- Reasons for hardness – units of hardness - determination of hardness and alkalinity - Water for steam generation - Boiler troubles – Priming and

UNIT - V: Water Technology Hard water:-Reasons for hardness – units of hardness determination of hardness andalkalinity -Water for steam generation - Boiler troubles – Priming and Foaming, Scale

Foaming, Scale formation, Boiler	formation, Boiler corrosion, Caustic
corrosion, Caustic embrittlement -	embrittlement - Internal treatments -
Internal treatments - Softening of Hard	Softening of Hard water : Lime – Soda
water : Lime - Soda process, Zeolite	process, Zeolite process and numerical
process and numerical problems based	problems based on these processes and lor
on these processes and Ion Exchange	Exchange process - Water for drinking
process - Water for drinking purposes-	purposes- Purification – Sterilization and
Purification – Sterilization and	disinfection : Chlorination, Break point
disinfection : Chlorination, Break point	chlorination and other methods – Reverse
chlorination and other methods -	Osmosis and Electro Dialysis.
Reverse Osmosis and Electro Dialysis. •	
UNIT VI: CHEMISTRY OF ENGINEERING	
MATERIALS AND FUEL CELLS Refractories:	
- Definition, characteristics, classification,	
properties, failure of refractories	
Lubricants: - Definition, function, Theory	
and mechanism of lubricants, properties	
(Definition and importance) Cement: -	
Constituents, manufacturing, hardening	
and setting, deterioration of cement	
Insulators: - Thermal and electrical	
insulators Fuel cells: - Hydrogen Oxygen	
fuel cells - Methanol Oxygen fuel cells	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	 Engineering/Applied Chemistry Lab 	Engineering Chemistry Lab
Title		
Course	R161227/ R161118	171BS1L01
Code		
	1. Introduction to Chemistry laboratory –	Exercise 1: Introduction to Chemistry
	Molarity, Normality, Primary, secondary	laboratory – Molarity, Normality, Primary,
	standard solutions, Volumetric titrations,	secondary standard solutions, Volumetric
	Quantitative analysis, Qualitative	titrations, Quantitative analysis, Qualitative
	analysis, etc	analysis, etc.
	2. Trial experiment - Determination of	Exercise 2: Trial experiment -
	HCI using standard Na2CO3 solution	Determination of HCI using standard
Sullabus		Na2CO3 solution.
Syllabus	3. Determination of alkalinity of a sample	Exercise 3: Preparation of Phenol
	containing Na2CO3 and NaOH.	Formaldehyde resin (Bakelite).
	4. Determination of KMnO4 using	Exercise 4: Determination of KMnO4 using
	standard Oxalic acid solution	standard Oxalic acid solution.
	5. Determination of Ferrous iron using	Exercise 5: Determination of ferrous iron
	standard K2Cr2O7 solution	using standard K2Cr2O7 solution.
nrae de la companya d	6. Determination of Copper using	Exercise 6: Preparation of Bio-Diesel.
	standard K2Cr2O7 solution	The second secon
	7. Determination of temporary and	Exercise 7: Determination of temporary
	permanent hardness of water using	and permanent hardness of water using
	standard EDTA solution.	standard EDTA solution.
	8. Determination of Copper using	Exercise 8: Determination of Copper using
	standard EDTA solution	standard EDTA solution.
	9. Determination of Iron by a	Exercise 9: Determination of Iron by a
	Colorimetric method using thiocynate as	Colorimetric method using thiocynate as
	reagent.	reagent.
	10. Determination of pH of the given	Exercise 10: Determination of pH of the
	sample solution using pH meter.	given sample solution using pH meter.
	11. Conductometric titration between	Exercise 11: Conduct metric titration
	strong acid and strong base.	between strong acid and strong base.
	12. Conductometric titration between	Exercise 12: Conduct metric titration
	strong acid and weak base.	between strong acid and weak base.
	13. Potentiometric titration between	Exercise 13: Potentiometric titration
	strong acid and strong base.	between strong acid and strong base.
	14. Potentiometric titration between	Exercise 14: Potentiometric titration

strong acid and weak base.	between strong acid and weak base.
15. Determination of Zinc using standard	Exercise 15: Determination of Zinc using
EDTA solution.	standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin - C.

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Programming Lab	Computer Programming Lab
Title		
Course	R161119	171ES1L01
Code		
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, ls, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors –Turbo vi, Emacs 1.2) C Program to Perform Addition Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise – 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise – 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario – 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the ATM and Net banking for which OTP was sent to his registered mobile number. Using this OTP number he has

	to generate ATM PIN number. After generating PIN number, he can use it for
	further transactions. Maximum login he
	can make is 3 times.
	Sample Input:
1	OTP: 6732
	If valid
1	Enter PIN: 8858
	Confirm your PIN: 8858
	Sample output: valid/Invalid
	PIN generated successfully.
	Note: OTP is hard coded.
	3.4) Scenario - 2 RESET PASSWORD:
	Sindhuja was using Syndicate Bank's
	Online Account. She wanted to pay her
	bills through Online. But she forget her
	password. Now she has to reset the
	password. For resetting the password, she has to select reset option from the
	Menu.
	NOTE: using switch case.
	Sample input:
	1. Fast withdrawal
	2. Mini Statement.
	3. Balance Enquiry
	4. Reset Password
	Enter your choice: 4
	Sample Output: Reset password: New password: ***** Confirm password:
	password.
Exercise – 4 Control Flow - II	Exercise -4:
a) Write a C Program to Find Whether	Control Flow - II
the Given Number is	4.1) Write a C Program to Find Whether
i) Prime Number	the Given Number is
ii) Armstrong Number	i) Prime Number
b) Write a C program to print Floyd	ii) Armstrong Number
Triangle	4.2) Write a C program to print Floyd
c) Write a C Program to print Pascal	Triangle 4.3) Write a C Program to print Pasca
Triangle	Triangle
Exercise – 5 Functions	Exercise – 5:
a) Write a C Program demonstrating	Control Flow – III
of parameter passing in Functions and	5.1) Write a C program to find the sun

returning values. b) Write a C Program illustrating Fibonacci, Factorial with Recursion without Recursion.	of individual digits of a positive integer. 5.2) Write a C program to check whether given number is palindrome or not. 5.3) Write a C program to read two numbers, x and n, and then compute the sum of the geometric progression 1+x+x2+x3++xn. 5.4) Scenario - 3 Student Attendance report Generation: Some of the school staff had failed to maintain the attendance of the students, causing lack of essential records related to students attendance that should be submitted in a parents meet. The school
Exercise – 6 Control Flow - III	management has decided to automate the process in order to maintain the attendance of every student effectively. You are asked to write a program to the above scenario and display whether the student is allowed to write the Exam or not. Exercise 6:
a) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase b) Write a C Program to convert decimal to binary and hex (using switch call function the function)	Arrays Demonstration of arrays 6.1) Linear Search. 6.2) Bubble Sort. 6.3) Operations on Matrix. 6.4) Scenario – 4 Celebrity of the Week: Red FM has launched a program called Celebrity of the week in their channel. Listeners are given a toll free number where they can listen to list of celebrities. Listeners can choose their favourite celebrity from the list and vote for him/her. The votes are validated from Monday to Saturday. The one with highest votes is called as "Celebrity of the Week" and his/her songs are played in the program, which is aired on Sundays. Now write a program to find the celebrity of the week.
Exercise – 7 Functions - Continued Write a C Program to compute the values of sin x and cos x and e^x values using Series	Exercise – 7: Functions 7.1) Write a C Program to demonstrate parameter passing in Functions and

expansion. (use factorial function)	returning values. 7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario – 5 SELF DRIVE RENTAL Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT, In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5 kmph, then Rs.12 per km.
	• In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km. • In XL, 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
Exercise – 8 Arrays Demonstration of arrays a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	Exercise – 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario – 6 Word with

	Obesity: Jeeth is a fun loving and active boy. He likes to play with words and numbers. One day Jeeth and his friends attended a seminar, which was conducted in his school. The Seminar was about "Causes of obesity in children and its effects". Jeeth and his friend Ram are not interested in listening to the seminar, so he thought of giving a puzzle to Ram. Jeeth gave some words to Ram and wanted him to find the word with Obesity. Ram was confused and asking your help. Write a program to find the weights of the words and display the word with highest weight (word with obesity).
Exercises - 9 Structures a) Write a C Program to Store Information of a Movie Using Structure b) Write a C Program to Store Information Using Structures with Dynamically Memory Allocation c) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function	Exercise – 9: Arrays and Pointers 9.1) Write a C Program to Access Elements of an Array Using Pointer 9.2) Write a C Program to find the sum of numbers with arrays and pointers.
Exercise - 10 Arrays and Pointers a) Write a C Program to Access Elements of an Array Using Pointer b) Write a C Program to find the sum of numbers with arrays and pointers.	Exercise – 10: Dynamic Memory Allocations 10.1) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc () function. 10.2) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function. Understand the difference between the above two programs
Exercise – 11 Dynamic Memory Allocations a) Write a C program to find sum of n elements entered by user. To perform this program,	Exercises – 11: Structures: 11.1) Write a C Program to Store Information of a book Using Structure 11.2) Write a C Program to Store

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs

Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/-

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR,

Sample output

No. of days returned after the due date =

5

Late fee per day = Rs. 50 Fine paid by the student is 5 * 50 = 250.

Exercise - 12 Strings

 a) Implementation of string manipulation operations with library function.

- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

12.1) Write a C program to open a file and to print the contents of the file on screen.

12.2) Write a C program to copy content of one file to another file.

12.3) Write a C program to merge two files and store content in another file.

12.4) Scenario – 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

- 1. Add New Student
- 2. Update Existing Student

		3. Delete Existing Student 4. Retrieve A Particular/All Students Sample Input: Choose the task you want to perform: 1. Add 2. Update 3. Delete 4. Retrieve Your choice: 1 Enter student details: Name: Akhil Age: 5 Class: 1 Sample Output: Student details added
	Exercise -13 Files a) Write a C programming code to open a file and to print it contents on screen. b) Write a C program to copy files	
	Exercise - 14 Files Continued a) Write a C program merges two files and stores their contents in another file. b) Write a C program to delete a file.	
c	Exercise – 15 a) System Assembling, Disassembling and identification of Parts / Peripherals. b) Operating System Installation-Install Operating Systems like Windows, Linux along with necessaryDevice Drivers.	
	Exercise – 16 a) MS-Office / Open Office i) Word - Formatting, Page Borders, Reviewing, Equations, symbols. ii) SpreadSheet - organize data, usage of formula, graphs, charts. iii) Powerpoint - features of power point, guidelines for preparing an effective presentation. b) Network Configuration & Software Installation-Configuring TCP/IP, Proxy, and firewallsettings. Installing application software, system software	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision .	Post-Revision
Course	Engineering Physics	 Engineering Physics
Title		
Course	R161204	171BS2T07
Code		
	UNIT-I INTERFERENCE: Principle of	UNIT-I: Interference: Principle of
	Superposition – Coherent Sources –	Superposition – Coherence – Interference
	Interference in thin films (reflection	in thin films (reflection geometry)—
Syllabus	geometry) – Newton's rings –	Newton's rings – construction and basic
	construction and basic principle of	principle of Interferometer.
	Interferometers.	
	UNIT-II DIFFRACTION: Fraunhofer	UNIT-II: Diffraction: Fraunhofer diffraction
	diffraction at single slit cases of double	at single slit - Cases of double slit, N-slits, &
	slit, N-slits & Circular Aperture	circular aperture, Grating equation –
	(Qualitative treatment only)-Grating	Rayleigh criterion of resolving power-
	equation - Resolving power of a grating,	Resolving power of a grating, Telescope
	Telescope and Microscopes	and Microscopes.
(80)	UNIT-III POLARIZATION: Types of	UNIT-III: Polarization: Types of Polarization-
	Polarization-production - Nicol Prism -	production - Nicol Prism -Quarter wave
	Quarter wave plate and Half Wave plate	plateand Half Wave plateworking principle
	 Working principle of Polarimeter 	of polarimeter (Sacharimeter) Lasers:
	(Sacharimeter) LASERS: Characteristics-	Characteristics- Stimulated emission -
	Stimulated emission – Einstein's	Einstein's Transition Probabilities- Pumping
	Transition ProbabilitiesPumping schemes	schemes- Ruby laser – Helium Neon laser-
	- Ruby laser – Helium Neon laser.	CO2 Laser-Applications
	UNIT-IV ACOUSTICS: Reverberation time -	UNIT-IV: Acoustics: Reverberation time -
	Sabine's formula – Acoustics of concert-	Sabine's formula – Acoustics of concert-
	hall. ULTRASONICS: Production -	hall. Ultrasonics: Production - Ultrasonic
	Ultrasonic transducers- Non-Destructive	transducers- Non-Destructive Testing-
	Testing – Applications	Applications. Crystallography & x-ray
		diffraction: Basis and lattice - Crystal
		Systems – Bravais Lattice - Symmetry
		elements- Unit cellpacking fraction –
		coordination number- Miller indices –
		Separation between successive (h k l)
		planes – Bragg's law-Bragg's x-ray
		spectrometer.

UNIT-V CRYSTALLOGRAPHY & X-RAY DIFFRACTION: Basis and lattice — Bravais systems Symmetry elements- Unit cell-packing fraction — coordination number-Miller indices — Separation between successive (h k l) planes — Bragg's law NUCLEAR ENERGY — SOURCE OF POWER: Mass defect & Binding Energy — Fusion and Fission as sources — Fast breeder Reactors.	UNIT-V: Magnetism: Classification based on Field, Temperature and order/disorder – atomic origin – Ferromagnetism-Hysteresis- applications of magnetic materials (Para &Ferro). Dielectrics: Electric Polarization – Dielectric in DC fields – Internal field –Clausius Mossoti Equation – Dielectric loss- Ferroelectric Hysteresis and applications.
UNIT-VI MAGNETISM: Classification based on Field, Temperature and order/disorder —atomic origin — Ferromagnetism- Hysteresis- applications of magnetic materials (Para &Ferro) DIELECTRICS: Electric Polarization — Dielectrics in DC and AC fields — Internal field — Clausius Mossoti Equation - Loss, Breakdown and strength of dielectric materials — Ferroelectric Hysteresis and applications.	

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Signature of the HOD Head of the Department Department of H & BS Aditya Engineering College (AS)



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-I	Mathematics-I ·
Title		
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equations Equations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax V(x), xV(x)-
	V(x), xV(x)- Method of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
		Problems using the command 'dsolve')
		Applications: Electric circuits, simple
40.		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
	theorems - Transforms of derivatives and	Solution of linear systems – Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method.
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms- Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	electrical circuits.
	differential equations (initial value	
	problems) using Laplace transforms.	
	UNIT IV: Partial differentiation:	UNIT IV: Eigen values - Eigen vectors and
	Introduction- Homogeneous function-	Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain	
		vectors—Properties of eigen values
	ruleGeneralized Mean value theorem for	(without proof) – Cayley -Hamilton

single variable (without proof)-Taylor's	theorem (without proof) - Inverse and
and Mc Laurent's series expansion of	powers of a matrix by using Cayley -
functions of two variables- Functional	Hamilton theorem- Diagonalization-
dependence- Jacobian. Applications:	Quadratic forms- Reduction of quadratic
Maxima and Minima of functions of two	form to canonical form using orthogonal
variables without constraints and	transformation – Nature of the quadratic
Lagrange's method (with constraints).	form. *(MATLAB Exercise: All Basic
,	Operations on matrices are to be
	implemented using MATLAB including
	computation of rank, computation of eigen
	values and eigen vectors)
UNIT V: First order Partial differential	UNIT V: Partial differentiation and Partial
equations: Formation of partial	differential equations: Homogeneous
differential equations by elimination of	function-Euler's theorem-Total derivative-
arbitrary constants and arbitrary	Chain rule-Taylor's and Maclaurin's series
functions –solutions of first order linear	expansion of functions of two variables-
(Lagrange) equation and nonlinear	Functional dependence Jacobian.
(standard types) equations.	Formation of partial differential equations
(standard types) equations.	by elimination of arbitrary constants and
	arbitrary functions –solutions of first order
	linear (Lagrange) equation, nonlinear
	(standard types) equations. Applications:
	Maxima and Minima of functions of two
	variables without constraints and
	Lagrange's method (with constraints).
	*(MATLAB Exercise: To Plot graphs of
	various single and multivariable functions
	using MATLAB and analyze their maxima
	and minima graphically).
 UNIT VI: Higher order Partial differential	and minima graphically).
equations: Solutions of Linear Partial	
differential equations with constant	
coefficients. RHS term of the type	
e^(ax+by), sin(ax+by), cos(ax+by), x^m	* · ·
y^n Classification of second order partial	
 differential equation	

 $\label{eq:Gamma-state} \textbf{Signature of the course coordinator}$

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Signature of the HOD
Head of the Department
Department of H.3.
Aditya Engineering Correct



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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision .
Course	Mathematics-II	Mathematics-II (except for ECE)
Title		
Course	R161202	171BS2T02
Code		
	UNIT I: Solution of Algebraic and	UNIT I: Solution of Algebraic and
	Transcendental Equations: Introduction-	Transcendental Equations and
341	Bisection method – Method of false	Interpolation: Introduction- Bisection
	position - Iteration method - Newton	method - Method of false position -
	Raphson method (One variable and	Iteration method – Newton - Raphson
	simultaneous Equations).	method. Errors in polynomial interpolation
		- Finite differences- Forward differences-
		Backward differences –Central differences
		- Relation between operators - Differences
		of a polynomial-Newton's formulae for
		interpolation – Interpolation with unequal
		intervals - Lagrange's interpolation formula.
	UNIT II: Interpolation: Introduction-	UNIT II: Numerical Integration and solution
	Errors in polynomial interpolation – Finite	of Ordinary Differential equations:
	differences- Forward differences,	Trapezoidal rule- Simpson's 1/3rd and
	Backward differences –Central	3/8th rule-Solution of ordinary differential
	differences - Symbolic relations and	equations by Taylor's series-Picard's
	separation of symbols - Differences of a	method of successive approximations-
Syllabus	polynomial-Newton's formulae for	Euler's method, Modified Euler's method -
	interpolation – Interpolation with	Runge - Kutta method (fourth order).
	unequal intervals - Lagrange's	,
	interpolation formula.	
	UNIT III: Numerical Integration and	UNIT III: Fourier Series: Fourier series of
	solution of Ordinary Differential	periodic function - Dirichlet's conditions for
	equations: Trapezoidal rule- Simpson's	Fourier expansion - Functions having points
	1/3rd and 3/8th rule-Solution of ordinary	of discontinuities—Change of interval – Even
	differential equations by Taylor's series-	and odd functions – Half-range series.
	Picard's method of successive	and odd functions than funge series.
	approximations-Euler's method	
	RungeKutta method (second and fourth	
	order).	
	UNIT IV: Fourier Series: Introduction-	UNIT IV: Fourier Transforms: Fourier
	Periodic functions – Fourier series of -	integral theorem (without proof) – Fourier
	remode functions - rouner series of	integral theorem (without proof) - rouner

periodic function - Dirichlet's conditions - Even and odd functions -Change of interval - Half-range sine and cosine series.	sine and cosine integrals - sine and cosine transforms – properties – inverse transforms – Finite Fourier transforms.
UNIT V: Applications of PDE: Method of separation of Variables- Solution of One dimensional Wave, Heat and two dimensional Laplace equation.	UNIT V: Applications of Partial Differential Equations: Classification of Higher order P.D.E - Method of separation of Variables-Solution of One dimensional Wave equation, Heat equation and two-dimensional Laplace equation.
UNIT VI: Fourier Transforms: Fourier integral theorem (without proof) – Fourier sine and cosine integrals - sine and cosine transforms – properties – inverse transforms – Finite Fourier transforms.	•

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Department of Humanities & Basic Sciences

Regulation	. Pre-Revision	Post-Revision,
Course	Mathematics-III ·	Mathematics-III
Title		
Course Code	R161203	171BS2T06
Syllabus	UNIT I: Linear systems of equations: Rank-Echelon form-Normal form — Solution of linear systems — Gauss elimination - Gauss Jordon- Gauss Jacobi and Gauss Seidal methods. Applications: Finding the current in electrical circuits.	UNIT - I: Laplace transforms: Laplace transforms of standard functions-First Shifting theorem, Change of scale, Multiplication with t, Division by t - Transforms of derivatives and integrals — Unit step function —Dirac's delta function, Periodic functions.
	UNIT II: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen vectors— Properties — Cayley-Hamilton theorem - Inverse and powers of a matrix by using Cayley-Hamilton theorem-Diagonalization— Quadratic forms-Reduction of quadratic form to canonical form — Rank - Positive, negative and semi definite - Index — Signature. Applications: Free vibration of a two-mass system.	UNIT- II: Inverse Laplace transforms: Inverse Laplace transforms – Convolution theorem (without proof), Second shifting theorem. *(MATLAB Exercise: Computing Laplace transform off (t) using symbolic toolbox, Solving initial value problems using 'dsolve') Applications: Evaluating improper integrals, solving initial value problems using Laplace transforms.
	UNIT III: Multiple integrals: Curve tracing: Cartesian, Polar and Parametric forms. Multiple integrals: Double and triple integrals – Change of variables – Change of order of integration. Applications: Finding Areas and Volumes.	UNIT - III: Multiple integrals and Beta, Gamma functions: Multiple integrals: Double and triple integrals — Change of variables — Change of order of integration, Beta and Gamma functions- Properties - Relation between Beta and Gamma functions Applications: Finding Areas and Volumes.
	UNIT IV: Special functions: Beta and Gamma functions- Properties - Relation between Beta and Gamma functions. Evaluation of improper integrals. Applications: Evaluation of integrals. UNIT V: Vector Differentiation: Gradient-Divergence- Curl - Laplacian and second order operators -Vector identities.	UNIT - IV: Vector Differentiation: Gradient - Directional Derivatives - Divergence- Curl - Laplacian operator - Vector identities. Applications: Equation of continuity, potential surfaces UNIT - V: Vector Integration: Line integral – Work done - Surface and volume integrals, Green's Theorem, Stokes Theorem and

Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
UNIT VI: Vector Integration: Line integral - Work done - Potential function - Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems.	
Applications: Work done, Force.	•

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course	Environmental Studies	Environmental Studies
Title		
Course	R161108	171HS1T02/171HS2T02
Code		
	UNIT - I Multidisciplinary nature of	UNIT -I: Ecosystems: Scope of
	Environmental Studies: Definition, Scope	environmental studies, Structure-
	and Importance –Sustainability:	Producers, consumers and decomposers
	Stockholm and Rio Summit-Global	Function – Food chain, Food web, Tropic
	Environmental Challenges: Global	structure and Energy flow in the ecosystem
	warming and climate change, Carbon	Ecological pyramids, nutrient recycling,
	Credits, acid rains, ozone layer depletion,	primary and secondary production,
Cullahua	population growth and explosion, effects.	ecosystem regulation. Ecological succession
Syllabus	Role of information Technology in	Terrestrial ecosystem and aquatic
	Environment and human health.	ecosystem - Introduction, types,
	Ecosystems: Concept of an ecosystem	characteristic features.
	Structure and function of an ecosystem	
	Producers, consumers and decomposers.	
	- Energy flow in the ecosystem -	
	Ecological succession. – Food chains, food	
	webs and ecological pyramids	
	Introduction, types, characteristic	а
	features, structure and function of Forest	as B
	ecosystem, Grassland ecosystem, Desert	
	ecosystem, Aquatic ecosystems.	
	UNIT - II Natural Resources: Natural	UNIT - II: Natural Resources: Natural
	resources and associated problems	resources and associated problems Forest
	Forest resources - Use and over -	resources – Use and over – exploitation,
	exploitation, deforestation - Timber	deforestation – Timber extraction – Mining,
	extraction - Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	people Water resources – Use and over
	resources - Use and over utilization of	utilization of surface and ground water –
	surface and ground water - Floods,	Floods, drought, conflicts over water, dams
	drought, conflicts over water, dams -	- benefits and problems Mineral resources:
	benefits and problems Mineral resources:	Use and exploitation, environmental effects
	Use and exploitation, environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT III Biodiversity and conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India biodiversity: Conservation of conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well Solid Waste Management: being. Sources. Classification, effects control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation

rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) ActWater (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act-Issues involved in	of people; its problems and concerns. Global challenges Environmental ethics: Issues and possible solutions. Environmental Protection Act - Air (Prevention and Control of Pollution) Act. — Water (Prevention and control of Pollution) Act -Wildlife Protection Act - Forest Conservation Act-Issues involved in
enforcement of environmental legislationPublic awareness.	enforcement of environmental legislation Public awareness and Environmental management.
UNIT – VI Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism, Green Campus – Green business and Green politics. The student should Visit an Industry / Ecosystem and submit a report individually on any issues related to Environmental Studies course and make a power point presentation.	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	 Pre-Revision 	Post-Revision .
Course	Probability & Statistics	 Probability & Statistics
Title		
Course	R1621011/R1622271	171BS3T10/171BS4T10
Code		
	UNIT I: Discrete Random variables and	UNIT I: Random variables and Distributions
	Distributions: Introduction-Random	Review of elementary probability, Random
	variables- Discrete Random variable-	variables- Discrete and Continuous Random
	Distribution function Expectation-	variable-Distribution function-Expectation,
	Moment Generating function-Moments	variance, Moment Generating function –
	and properties. Discrete distributions:	Discrete Distributions- Binomial, Poisson
	Binomial, Poisson and Geometric	Continuous Distributions -Normal
	distributions and their fitting to data.	Distribution.
	UNIT II: Continuous Random variable and	UNIT II: Sampling Theory Introduction -
	distributions: Introduction-Continuous	Population and samples- Sampling
	Random variable-Distribution function-	distribution of means (known and
	Expectation-Moment Generating	unknown), proportion, sampling
	function-Moments and properties.	distribution of sums and difference-Central
	Continuous distribution: Uniform,	limit theorem. Point and interval
	Exponential and Normal distributions,	estimation for means and proportions.
	Normal approximation to Binomial	
	distribution -Weibull, Gamma	
	distribution.	
Syllabus	UNIT III: Sampling Theory: Introduction -	UNIT III: Tests of Hypothesis Introduction -
	Population and samples- Sampling	Statistical hypothesis-Errors of sampling,
	distribution of means (a known)-Central	level of significance - One tail and two-tail
	limit theorem- t-distribution- Sampling	tests- Testing of hypothesis concerning
	distribution of means (o unknown)-	single mean, proportion, two means and
	Sampling distribution of variances – χ^2	two proportions using Z-test. Testing of
	and F-distributions- Point estimation-	hypothesis concerning single mean, two
	Maximum error of estimate - Interval	means using t test. Independence of
	estimation.	attributes by χ 2 –test-ANOVA for one-way
		and two-way classified data.
	UNIT IV: Tests of Hypothesis:	UNIT IV: Correlation and Regression
	Introduction -Hypothesis-Null and	Introduction – Simple correlation-
	Alternative Hypothesis- Type I and Type II	properties-Pearson and rank correlation
	errors -Level of significance - One tail and	Regression – straight line and quadratic
	two-tail tests- Tests concerning one mean	curve by method of least squares.

and proportion, two means- Proportions and their differences- ANOVA for one- way and two-way classified data.	
UNIT V: Curve fitting and Correlation: Introduction - Fitting a straight line – Second degree curve-exponential curve- power curve by method of least squares- Goodness of fit. Correlation and Regression – Properties.	UNIT V: Statistical Quality Control Methods Introduction - Methods for preparing control charts – Problems using x-bar, p, R charts and attribute charts
UNIT VI: Statistical Quality Control Methods: Introduction - Methods for preparing control charts - Problems using x-bar, p, R charts and attribute charts.	

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Program Name: B.Tech. in Petroleum Technology

	Syllabus Revision for the Academic Year 2017-2018				
S.No	Semester	Course Code	Course Name	% of content revised for the existing year	
1	I	171HS1T01	English - I	65	
2	I	171BS1T01	Mathematics - I	40	
3	I	171HS1T02	Environmental Studies	20	
4	I	171BS1T03	Engineering Chemistry	25	
5	I	171ES1T02	Engineering Mechanics	0	
6	I	171ES1T01	Computer Programming	0	
7	I	171HS1L04	English Communication Skills Lab - I	. 10	
8	I	171BS1L01	Engineering Chemistry Lab	20	
9	I	171ES1L01	Computer Programming Lab	40	
10	II	171HS2T03	English - II	55	
11	II	171BS2T06	Mathematics - III	40	
12	II	171BS2T02	Mathematics - II	10	
13	II	171BS2T07	Engineering Physics	25	
14	II	171ES2T03	Engineering Drawing	0	
15	II	171ES2T07	Elements Of Mechanical Engineering	0	
16	II	171HS2L02	English Communication Skills Lab - II	40	
17	II	171BS2L02	Engineering Physics Lab	10	
18	II	171ES2L02	Engineering Workshop And IT Workshop	0	
19	III	R1621081	Complex Variables 0		
20	III	R1621012	Basic Electrical And Electronics Engineering 0		
21	III	R1621272	General Geology 0		
22	III .	R1621273	Surveying And Offshore Structures 0		
23	III	R1621084	Chemical Process Calculations 0		
24	III	R1621271	Materials Science And Engineering 0		
25	III	R1621085	Basic Engineering (Mech. + Elec.) Lab	0	
26	III	R1621274	Geology And Surveying Lab	0	
27	III	R1621075	Managerial Economics And Financial Analysis	0	
28	IV	R1622271	Probability And Statistics	30	
29	IV	R1622272	Momentum Transfer	0	
30	IV	R1622273	Petroleum Geology	0	
31	IV	R1622274	Thermodynamics For Petroleum Engineers	0	
32	IV	R1622275	Process Heat Transfer	10	
33	IV	R1622276	Petroleum Exploration	0	
34	IV	R1622277	Momentum Transfer Lab	0	
35	IV	R1622278	Process Heat Transfer Lab	0	
36	IV	R1621019	Professional Ethics And Human Values	0	
37	V	RT31086	Process Instrumentation	0	
38	V	RT31271	Petroleum Exploration	0	
39	V	RT31272	Well Logging And Formation Evaluation	0	
40	V	RT31273	Drilling Technology	0	
41	V	RT31274	Well Engineering	0	

S.No	Semester	Course Code	Course Name	% of content revised for the existing year
42	V	RT31275	Process Dynamics And Control	0
43	V	RT31277	Instrumentation And Process Control Lab	0
44	V	RT31278	Drilling Fluids Lab	0
45	VI	RT32271	Well Completions	0
46	VI	RT32272	Petroleum Reservior Engineering-I	0
47	VI	RT32273	Petroleum Production Engineering And Design	0
48	VI	RT32274	Petroleum Refinery And Petrochemical Engineering	0
49	VI	RT32275	Surface Production Operations	0
50	VI	RT32277	Petroleum Analysis Lab	0
51	VI	RT32278	Drilling Simulation Lab	0
52	VI	RT32056	IPR Patents	0
53	VII	RT41271	Integrated Asset Management	0
54	VII	RT41272	Enhanced Oil Recovery Techniques	0
55	VII	RT41273	HSE And FE In Petroleum Industry	0
56	VII	RT41274	Petroleum Reservoir Engineering - II	0
57	VII	RT41016F	Green Fuel Technologies	0
58	VII	RT41016A	Energy Management	0
59	VII	RT41016B	Fundamentals Of Petroleum Industry	0
60	VII	RT41016C	Offshore Enginnering	0
61	VII	RT41016D	Pipeline Enginnering	0
62	VII	RT41279	Coal Bed Methane Engineering	0
63	VII	RT4127L	Petroleum Equipment Design And Simulation Lab	0
64	VII	RT4127M	Petroleum Reservoir Engineering Lab	0
65	VII	RT4127N	Presentation Of Sip Report	0
66	VIII	RT42275	Project	0
67	VIII	RT42271	Petroleum Economics And Regulations And Policies	0
68	VIII	RT42272A	Reservoir Modeling And Simulation	0
69	VIII	RT42272B	Horizontal Well Technology	0
70	VIII	RT42272C	Lng-Processes And Transportation And Storage	0
71	VIII	RT42273A	Reservoir Stimulation	0
72	VIII	RT42273B	Subsea Engineering	0
73	VIII	RT42273C	Fundamentals Of Multiphase Flow	0
74	VIII	RT42274A	Natural Gas Hydrates	0
75	VIII	RT42274B	Advanced Natural Gas Engineering	0
76	VIII	RT42274C	Petroleum Biotechnology	0

Total number of courses in the academic year 2017-2018	= 76
Number of courses having revision in syllabus content >/= 20% in the academic year 2017-2018	= 11
Percentage of syllabus revision carried out in the academic year 2017- 2018 = (11/76)*100	= 14.47%

Program Coordinator

Head of the Department

Head of the Department Department of Petroleum Technology Aditya Engineering College (A) SURAMPALEM-5 437



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Department of Petroleum Technology

Date: 01-06-2017

Minutes of the I meeting of BOS scheduled on 29-05-2017

The I meeting of the BOS of PT was held virtually on 29-05-2017at 9.30 AM through Microsoft Teams. Prof R. Giri Prasad, Chairperson presided over the meeting.

Agenda 1.1: Welcome address by Chair Person.

Dr. R. Giri Prasad, BOS Chairperson invited the distinguished members of BOS to the I BOS Meeting.

Agenda 1.2: Discussion and ratification of the Vision and Mission of the department and Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) of the Programs under the Department.

The BOS members have ratified the Vision and Mission of the department and Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) of the Programs under the Department.

Agenda 1.3: Discussion on proposed AR17 Program Structures of B. Tech (PT), M. Tech (PE) ratification of the same

The BOS members have ratified the AR17 Program Structures of B. Tech (PT), M. Tech (PE). The percentage of courses revised in this academic year 2017-2018 for B. Tech (PT) is 14.47% and M. Tech (PE) is 8.69 %. The list of courses revised is enclosed as annexure-I

Agenda 1.4: Discussion on proposed AR17 B. Tech (PT), M. Tech (PE) programs I, II & III semesters syllabus, and ratification of the same.

The BOS members have ratified the AR17 B. Tech, M. Tech, programs I, II & III semesters syllabus.

Agenda 1.5: Ratification of the proposed model question papers for sessional and external examinations of AR17 B. Tech (PT), M. Tech (PE) programs.

The BOS members have ratified the proposed model question papers for sessional and external examinations of AR17B.Tech (PT), M. Tech (PE) programs.

Agenda 1.6: Finalization of Experts from reputed institutions for setting question paper and valuation of answer scripts.

The BOS members have expressed regarding finalization of experts from reputed institutions for setting question paper and valuation of answer scripts.

Agenda 1.7: Analysis of Results

The BOS members have discussed regarding analysis of results of every semester.

Agenda 1.8: Analysis of Students Feedback & Action Taken Report.

The BOS members have discussed regarding analysis of Students Feedback & Action Taken Report.

Agenda 1.9: Analysis of Stakeholder's Feedback on Curriculum

The BOS chairperson presented the feedback on curriculum from stake holders. The BOS members noted the same and approved the feedback on curriculum. The Action Taken Report on Stakeholders Feedback is enclosed as Annexure-II.

Agenda 1.10: Any other item/s.

The BOS members have discussed and suggested to reduce Employability skills credits from 4 to 2 and to increase credits for main project.

The BOS members have discussed and suggested the courses which increases the opportunities of the students to get place in the core companies.

Agenda 1.11: Scheduling of the next BOS meeting.

The next BOS meeting is tentatively scheduled in the month of November 2017.

Agenda 1.12: Vote of Thanks

Dr. R. Giri Prasad, BOS Chairperson presented the Vote of thanks.

BOS Chairperson

Head of the Department
Department of Petroleum Technology
Aditya Engineering College
SURAMPALEM-533 437



ADITYA ENGINEERING COLLEGE

An Autonomous Institution

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Department of Petroleum Technology

Annexure-I

List of Courses Revised in the Academic Year 2017-2018

S. No	Program	Semester	Course Code	Course Name
1.	B. Tech (PT)	I	171HS1T01	English - I
2.	B. Tech (PT)	I	171BS1T01	Mathematics - I
3.	B. Tech (PT)	I	171HS1T02	Environmental Studies
4.	B. Tech (PT)	I	171BS1T03	Engineering Chemistry
5.	B. Tech (PT)	II	171HS1L01	English Communication Skills Lab - I
6.	B. Tech (PT)	II	171BS1L01	Engineering Chemistry Lab
7.	B. Tech (PT)	II	171ES1L01	Computer Programming Lab
8.	B. Tech (PT)	II	171HS2T03	English - II
9.	B. Tech (PT)	II	171BS2T06	Mathematics - III
10.	B. Tech (PT)	II	171BS2T02	Mathematics - II
11.	B. Tech (PT)	II	171BS2T07	Engineering Physics
12.	B. Tech (PT)	II	171HS2L02	English Communication Skills Lab - II
13.	B. Tech (PT)	II	171BS2L02	Engineering Physics Lab
14.	B. Tech (PT)	IV	R1622271	Probability and Statistics
15.	B. Tech (PT)	IV	R1622275	Process Heat Transfer
16.	M. Tech (PE)	II	172PE2E02	Optimization of Oil and Gas Production
17.		II	172PE2E05	Deep Water Technologies

BOS Chairperson

rlead of the Department Department of Petroleum Technology Aditya Engineering College SURAMPALEM-533 437



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Department of Petroleum Technology Annexure II

Action Taken Report on Stakeholders Feedback in the Academic Year 2017 2018

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1.	1.10	Employer suggested employability skill courses	As per discussions employability skills will be introduced
2.	1.1.3	Suggested to introduce Student practical based learning	Students are encouraged to do internships and also been determined to schedule several industrial visits for students.
3.	1.9	It is better to have electives in relation with the technological advancements	According to suggestions technical courses will be introduced in the curriculum.
4.	1.3	Suggested to offer more elective courses	As per discussions elective courses are offered in course structure
5.	1.8	Faculty- student interaction may be enhanced.	There is currently a faculty interaction hour when students can have their questions answered. Mentoring ideas also strengthen the faculty interaction period.
6.	1.10	Provide campus trainings on aptitude and reasoning	As per suggestions and discussions made, placement training sessions will be conducted in association with APITA and APSSDC.
7.	1.10	Requested to have many training in technical areas.	It was decided to place more emphasis on developing technical expertise and communication abilities.
8.	1.9	Revision of curriculum & syllabi of B. Tech. programmes	courses offered to B.Tech. Petroleum Technology are given
9.	1.6	Change in question paper pattern of semester end examinations	paper patterns were formulated for continuous assessments and semester end examinations.
10.	1.8	Suggested to conduct orientation on faculty and students on outcome based education	It was decided to organise outcome-based education on its significance for professors and students.

11.	1.3	Suggested to revise drilling technology area for employability	As per suggestions and discussions made subject revision will be implemented
12.	1.10	Student participation is required for the project to be completed successfully.	Projects are encouraged for students, and various industry visits will be planned.
13.	1.6	Change in question paper pattern of semester end examinations	As per suggestions and discussions with experts to overcome the deficiency, new question paper patterns were formulated for continuous assessments and semester end examinations.
14.	1.3	Suggested to offer more elective courses	As per suggestions and discussions with experts, elective courses will be introduced.
15.	1.10	Many technical training sessions were requested	As per suggestions and discussions with experts It was decided to prioritise the development of technical expertise and communication skills.

BOS Chairperson

Head of the Department
Department of Petroleum Technology
Aditya Engineering College
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Dt-08-06-2017

Department of Mining Engineering

Syllabus revision Index

2017-2018

S.No	Name of the course	Percentage of syllabus change
1	English-I	65
2	Mathematics-I	30
3	Engineering Chemistry	33
4	Environmental Studies	20
5	English -II	55
6	Mathematics-III	40
7	Engineering Physics	25
8	English - Communication Skills Lab – II	40

Signature of the course coordinator

Signature of the HOD

Head of the Department

DEPARTMENT OF MINING ENGINEERING

ADITYA ENGINEERING COLLEGE (A9)



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Department of Mining Engineering

2017-2018

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	English-II	English-I
Title		
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource- Education' from English Encounters	UNIT-I: 1. IN LONDON: M.K.GANDHI (Detailed)
	2. ' A P J Abdul Kalam' from The Great Indian Scientists.	2. G.D. NAIDU (Non-Detailed)
	UNIT 2: 1. ' A Dilemma' from English	
	Encounters	SOCIETY- APJ ABDUL KALAM
	2. 'C V Raman' from The Great Indian Scientists.	(Detailed) 2. G.R. GOPINATH (Non-Detailed)
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF
	to new Cultural Environments from	VIEW- J.B.S. HALDANE (Detailed)
-	English Encounters.	2. J.C. BOSE (Non-Detailed)
Syllabus	2. 'Homi Jehangir Bhabha' from The	2.0.0.2022 (2.0.0.201
	Great Indian Scientists.	
	UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-
	Great Indian Scientists	Detailed)
	UNIT 5: 1. 'The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN
	Change' from English Encounters	(Detailed) 2. A SHADOW (Non-Detailed)
	2. 'Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. 'The Chief Software Architect'	
	from English Encounters	
	2. 'Srinivasa Ramanujan' from The Great Indian Scientists.	
	mulair scientists.	

Signature of the course coordinator

Signature of the HOD

Regulation	Pre-Revision	Post-Revision
Course		
Title	Mathematics-I	Mathematics-I
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first order and first degree: Linear-Bernoulli-Exact-Reducible to exact. Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories- Electrical circuits-Chemical reactions.	Unit 1 Differential equations of first order and first degree: Linear differential equations - Bernoulli differential equation - Exact differential equations - Equations reducible to exact (Type-1, Type-2, Type-3, Type-4) Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories.
Syllabus	UNIT II: Linear differential equations of higher order: Non-homogeneous equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)- Method of Variation of parameters. Applications: LCR circuit, Simple Harmonic motion.	UNIT II: Linear differential equations of higher order: Linear differential equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)-Method of Variation of parameters, Method of undetermined coefficients. *(MATLAB Exercise: Introduction to MAT LAB commands and Solution of Initial Value Problems using the command 'dsolve') Applications: Electric circuits, simple harmonic motion
-	UNIT III: Laplace transforms: Laplace transforms of standard functions-Shifting theorems - Transforms of derivatives and integrals - Unit step function -Dirac's delta function- Inverse Laplace transforms- Convolution theorem (with out proof). Applications: Solving ordinary differential equations (initial value problems) using Laplace transforms.	UNIT III: Linear systems of equations: Rank of a matrix - Echelon form-Normal form - Solution of linear systems - Gauss elimination method - Gauss Seidal method. Applications: Finding the current in electrical circuits
	UNIT IV: Partial differentiation: Introduction-Homogeneous function-Euler's theorem-Total derivative-Chain rule Generalized Mean value theorem for single variable (without proof)-Taylor's and Mc Laurent's series expansion of functions of two variables— Functional dependence-Jacobian. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints).	UNIT IV: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen vectors— Properties of eigen values (without proof) — Cayley -Hamilton theorem (without proof) — Inverse and powers of a matrix by using Cayley —Hamilton theorem— Diagonalization— Quadratic forms— Reduction of quadratic form to canonical form using orthogonal transformation— Nature of the quadratic form. *(MATLAB Exercise: All Basic Operations on matrices are to be

	UNIT V: First order Partial differential equations: Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions –solutions of first order linear (Lagrange) equation and nonlinear (standard types) equations.	implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors) UNIT V: Partial differentiation and Partial differential equations Homogeneous function-Euler's theorem-Total derivative-Chain rule-Taylor's and Maclaurin's series expansion of functions of two variables—Functional dependence Jacobian. Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions—solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's
ě		method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically).
	UNIT VI:	
	Higher order Partial differential equations:	
	Solutions of Linear Partial differential equations with constant coefficients. RHS	
	term of the type e ^(ax+by) , sin (ax+by),	
	cos(ax+by), x ^m y ⁿ Classification of	
	second order partial differential equation	

Signature of the HOD

Regulation	Pre-Revision	Post-Revision
Course Title	Engineering Chemistry	Engineering Chemistry
Course	R161105	171BS1T03
Code		
Syllabus	UNIT I: HIGH POLYMERS AND PLASTICS Polymerisation:- Introduction- Mechanism of polymerization - Stereo regular polymers - methods of polymerization (emulsion and suspension) -Physical and mechanical properties - Plastics as engineering materials: advantages and limitations - Thermoplastics and Thermosetting plastics - Compounding and fabrication (4/5 techniques)- Preparation, properties and applications of polyethene, PVC, Bakelite Teflon and polycarbonates Elastomers: Natural rubber- compounding and vulcanization - Synthetic rubbers: Buna S, Buna N, Thiokol and polyurethanes - Applications of elastomers. Composite materials & Fiber reinforced plastics - Biodegradable polymers - Conducting polymers.	UNIT- I: High Polymers and Plastics: Polymerization Introduction- Mechanism of polymerization Stereo regular polymers - Physical and mechanical properties - Plastics a engineering materials: advantages and limitations - Thermoplastics and Thermosetting plastics - Compounding and fabrication (compression moulding, injection moulding, extrusion moulding and transfer moulding techniques) - Preparation properties and applications of polyethene PVC, Bakelite and polycarbonates Elastomers - Natural rubber- compounding and vulcanization - Synthetic rubbers: Bun S, Buna N, Thiokol - Applications of elastomers. Biodegradable polymers.
	UNIT II: FUEL TECHNOLOGY Fuels — Introduction — Classification — Calorific value - HCV and LCV — Dulong's formula — Bomb calorimeter — Numerical problems — Coal — Proximate and ultimate analysis — Significance of the analyses — Liquid fuels — Petroleum- Refining — Cracking — Synthetic petrol —Petrol knocking — Diesel knocking — Octane and Cetane ratings — Anti-knock agents — Power alcohol — Bio- diesel — Gaseous fuels — Natural gas, LPG and CNG — Combustion — Calculation of air for the combustion of a fuel — Flue gas analysis — Orsat apparatus — Numerical problems on combustion. Explosives:- Rocket fuels	UNIT - II: Fuel Technology: Fuels:- Introduction Classification - Calorific value - HCV and LCV - Dulong's formula - Coal - Proximate and ultimate analysis Significance of the analyses - Liquid fuels Petroleum- Refining - Cracking - Syntheti petrol -Petrol knocking - Diesel knocking Octane and Cetane ratings - Anti-knoc agents - Power alcohol - Bio-diesel Gaseous fuels - Natural gas. LPG and CNG Combustion - Calculation of air for th combustion of a fuel - Flue gas analysis Orsat apparatus.

UNIT III:

ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion :-Definition - Theories of Corrosion (chemical & electrochemical) - Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corresion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion -Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application (Galvanizing, Tinning, metals Electroplating, Electroless plating).

UNIT - III:

Electrochemical Cells and Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses of this series-Standard electrodes (Hydrogen and Calomel electrodes) - Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) – Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series -Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection - Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

Syllabus

UNIT IV:

CHEMISTRY OF ADVANCED **MATERIALS** Nano materials:-Introduction – Sol-gel method & chemical reduction method of preparation Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties applications Liquid crystals:-Introduction - Types - Applications Super conductors:-Type -IType Characteristics and applications Green synthesis:- Principles - 3or 4 methods of examples - R4M4 with synthesis principles

UNIT - IV:

Chemistry of Advanced Materials: Nano materials:-Introduction - Sol-gel method -Carbon nano tubes and fullerenes: Types, preparation, properties and applications. Super conductors:-Type -I, Type II -Characteristics and applications conductors: - Preparation of semiconductors, working of diodes and transistors. Green synthesis:-Principles Liquid crystals:-Introduction - Types - Applications Fuel cells: - Introduction - cell representation, H2-O2fuel cell: Design and working, advantages and Limitations. Types of fuel cells: methanol-oxygen fuel cells.

UNIT V:

WATER TECHNOLOGY Hard water:
Reasons for hardness – units of hardness determination of hardness and alkalinity Water for steam generation - Boiler
troubles – Priming and Foaming, Scale
formation, Boiler corrosion, Caustic
embrittlement - Internal treatments Softening of Hard water : Lime – Soda
process, Zeolite process and numerical
problems based on these processes and Ion
Exchange process - Water for drinking
purposes- Purification – Sterilization and
disinfection : Chlorination, Break point
chlorination and other methods – Reverse
Osmosis and Electro Dialysis.

UNIT - V:

Water Technology Hard water:-Reasons for hardness – units of hardness - determination of hardness andalkalinity - Water for steam generation - Boiler troubles – Priming and Foaming, Scale formation, Boiler corrosion, Caustic embrittlement - Internal treatments - Softening of Hard water : Lime – Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes- Purification – Sterilization and disinfection : Chlorination, Break point chlorination and other methods – Reverse Osmosis and Electro Dialysis.

Syllabus

UNIT VI:

CHEMISTRY OF **ENGINEERING MATERIALS** AND FUEL CELLS Refractories: - Definition, characteristics, classification, properties, failure of refractories Lubricants: - Definition, function, Theory and mechanism of lubricants, properties (Definition and importance) Cement: - Constituents, manufacturing, hardening and setting, deterioration of cement Insulators: -Thermal and electrical insulators Fuel cells: - Hydrogen Oxygen fuel cells -Methanol Oxygen fuel cells

Signature of the course coordinator

Signature of the HOD

Regulation Pre-Revision		Post-Revision
Course Title	Environmental Studies	Environmental Studies
Course Code R161108		171HS1T02
Syllabus	UNIT – I Multidisciplinary nature of Environmental Studies: Definition, Scope and Importance –Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, Carbon Credits, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information Technology in Environment and human health. Ecosystems: Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Energy flow in the ecosystem - Ecological succession. – Food chains, food webs and ecological pyramids Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems.	UNIT –I: Ecosystems: Scope of environmental studies, Structure-Producers, consumers and decomposers Function – Food chain, Food web, Tropic structure and Energy flow in the ecosystem Ecological pyramids, nutrient recycling, primary and secondary production, ecosystem regulation. Ecological succession Terrestrial ecosystem and aquatic ecosystem - Introduction, types, characteristic features.
	UNIT – II Natural Resources: Natural resources and associated problems Forest resources – Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by nonagriculture activities-effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides,	UNIT – II: Natural Resources: Natural resources and associated problems Forest resources – Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land

soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides. erosion soil and desertification. Role of individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT - III

Biodiversity and its conservation: Definition: genetic, species ecosystem diversity- classification Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India - Conservation of biodiversity: conservation of biodiversity.

UNIT - III:

Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a megadiversity nation - Hot-spots of biodiversity Threats biodiversity: habitat loss, manwildlife conflicts - Endangered and endemic species of India -Conservation of biodiversity

UNIT - IV

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e – waste management.

UNIT ---IV: Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention pollution. - Pollution case studies, Sustainable Life Style. Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e management.

UNIT – V

Social Issues and the Environment: Urban problems related to energy rain conservation, water harvesting-Resettlement and rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act-Issues in involved enforcement of

UNIT - V:

Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation of people; problems and concerns. Global challenges Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of -Wildlife Pollution) Act

Syllabus

Head of the Department
DEPARTMENT OF MINING ENCHREPRIM

environmental legislationPublic awareness.	Protection Act - Forest Conservation Act-Issues involved in enforcement of environmental legislation Public awareness and
	Environmental management.
UNIT – VI Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism, Green Campus – Green business and Green politics. The student should Visit an Industry / Ecosystem and submit a report individually on any issues related to Environmental Studies course and make a power point presentation.	

Signature of the HOD

Regulation	Pre-Revision	Post-Revision
Course Title	ENGLISH –I	English-II
Course Code	R161101	171HS2T03
	UNIT I: 1. 'Human Resources' from	UNIT-I: 1. Technology with
	English for Engineers and Technologists.	a human face (detailed)
	2. 'An Ideal Family' from Panorama: A	2. AN IDEAL FAMILY
	Course on Reading	(Non-Detailed)
	UNIT 2: 1. ' Transport: Problems and	UNIT-II: 1. Climate change
	Solutions' from English for Engineers and	and human strategy
	Technologists.	(detailed)
	2. 'War' from 'Panorama: A Course on	2. WAR (Non-Detailed)
	Reading'	
	UNIT 3: 1. 'Evaluating Technology' from	UNIT-III: 1. Emerging
	English for Engineers and Technologists.	technologies (detailed)
C-II-b	2. 'The Verger' from 'Panorama: A	2. THE VERGER (Non-
Syllabus	Course on Reading	Detailed)
	UNIT 4: 1. 'Alternative Sources of Energy'	UNIT-IV: 1. The secret of
	from English for Engineers and	work (detailed)
	Technologists.	2. the scarecrow (non-
	2. 'The Scarecrow' from Panorama: A	detailed)
	Course on Reading	
	UNIT 5: 1. 'Our Living Environment' from	UNIT-V: 1. Work brings
	English for Engineers and Technologists.	solace (detailed)
	2. 'A Village Host to Nation' from	2. a village lost to the nation
	Panorama : A Course on Reading	(non-detailed)
	UNIT 6: 1. 'Safety and Training' from	
	English for Engineers and Technologists.	
	2. 'Martin Luther King and Africa' from	
	Panorama: A Course on Reading	

Signature of the HOD

Head of the Department

EPARTMENT OF MINING ENGINEERING

DUTYA ENGINEERING COLLEGE (A9)

Regulation	Pre-Revision	Post-Revision
Course Title	MATHEMATICS-III	MATHEMATICS-III
Course Code	R161203	171BS2T06
Syllabus	UNIT I: Linear systems of equations: Rank- Echelon form-Normal form — Solution of linear systems — Gauss elimination - Gauss Jordon- Gauss Jacobi and Gauss Seidal methods. Applications: Finding the current in electrical circuits. UNIT II: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen vectors— Properties — Cayley-Hamilton theorem - Inverse and powers of a matrix by using Cayley-Hamilton theorem-Diagonalization— Quadratic forms-Reduction of quadratic form to canonical form — Rank - Positive, negative and semi definite - Index — Signature. Applications: Free vibration of a two-mass system. UNIT III: Multiple integrals: Curve tracing: Cartesian, Polar and Parametric forms. Multiple integrals: Double and triple integrals — Change of order of integration. Applications: Finding Areas and Volumes. UNIT IV: Special functions: Beta and Gamma functions- Properties - Relation between Beta and Gamma functionsEvaluation of improper integrals. Applications: Evaluation of integrals. UNIT V: Vector Differentiation: Gradient-Divergence- Curl - Laplacian and second order operators -Vector identities. Applications: Equation of continuity, potential surfaces UNIT VI: Vector Integration: Line integral — Work done — Potential function — Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	UNIT - I: Laplace transforms: Laplace transforms of standard functions-First Shifting theorem, Change of scale, Multiplication with t, Division by t - Transforms of derivatives and integrals - Unit step function - Dirac's delta function, Periodic functions. UNIT - II: Inverse Laplace transforms: Inverse Laplace transforms - Convolution theorem (without proof), Second shifting theorem. *(MATLAB Exercise: Computing Laplace transform off (t) using symbolic toolbox, Solving initial value problems using 'dsolve') Applications: Evaluating improper integrals, solving initial value problems using Laplace transforms. UNIT - III: Multiple integrals and Beta, Gamma functions: Multiple integrals: Double and triple integrals - Change of variables - Change of order of integration, Beta and Gamma functions- Properties - Relation between Beta and Gamma functions Applications: Finding Areas and Volumes. UNIT - IV: Vector Differentiation: Gradient - Directional Derivatives - Divergence-

Signature of the HOD

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Regulation	Pre-Revision	Post-Revision
Regulation Course Title Course Code Syllabus	Pre-Revision Engineering Physics R161204 UNIT-I INTERFERENCE: Principle of Superposition — Coherent Sources — Interference in thin films (reflection geometry) — Newton's rings — construction and basic principle of Interferometers. UNIT-II DIFFRACTION: Fraunhofer diffraction at single slit cases of double slit, N-slits & Circular Aperture (Qualitative treatment only)-Grating equation — Resolving power of a grating, Telescope and Microscopes UNIT-III POLARIZATION: Types of Polarization-production — Nicol Prism — Quarter wave plate and Half Wave plate — Working principle of Polarimeter (Sacharimeter) LASERS: Characteristics— Stimulated emission — Einstein's Transition ProbabilitiesPumping schemes — Ruby laser — Helium Neon laser. UNIT-IV ACOUSTICS: Reverberation time — Sabine's formula — Acoustics of concert-hall. ULTRASONICS: Production — Ultrasonic transducers—Non-Destructive Testing — Applications	Coherence – Interference in thinfilms (reflection geometry)— Newton's rings – construction and basic principle of Interferometer. UNIT-II: Diffraction: Fraunhofer diffraction at single slit - Cases of double slit, N-slits, & circular aperture, Grating equation – Rayleigh criterion of resolving power-Resolving power of a grating, Telescope and Microscopes. UNIT-III: Polarization: Types of Polarization-production - Nicol Prism -Quarter wave plateand Half Wave plateworking principle of polarimeter (Sacharimeter) Lasers: Characteristics— Stimulated emission – Einstein's Transition Probabilities-Pumping schemes- Ruby laser – Helium Neon laser-CO2 Laser-Applications UNIT-IV: Acoustics: Reverberation time - Sabine's formula – Acoustics of concert-hall. Ultrasonics: Production - Ultrasonic transducers- Non-Destructive Testing-Applications. Crystallography & x-ray diffraction: Basis and lattice – Crystal Systems – Bravais Lattice - Symmetry elements- Unit cellpacking fraction –
	UNIT-V CRYSTALLOGRAPHY & X-RAY DIFFRACTION: Basis and lattice — Bravais systemsSymmetry elements- Unit cell- packing fraction — coordination number- Miller indices — Separation between successive (h k l) planes — Bragg's law NUCLEAR ENERGY — SOURCE OF POWER: Mass defect & Binding Energy — Fusion and Fission as sources — Fast breeder Reactors. UNIT-VI MAGNETISM: Classification based on Field, Temperature and order/disorder — atomic origin — Ferromagnetism-	coordination number- Miller indices – Separation between successive (h k l) planes – Bragg's law-Bragg's x-ray spectrometer. UNIT-V: Magnetism: Classification based on Field, Temperature and order/disorder – atomicorigin – Ferromagnetism- Hysteresis-applications of magnetic materials (Para & Ferro). Dielectrics: Electric Polarization – Dielectric in DC fields – Internal field – Clausius Mossoti Equation – Dielectric loss-Ferroelectric Hysteresis and applications.

Hysteresis- applications of magnetic	
materials (Para &Ferro)	
DIELECTRICS: Electric Polarization -	
Dielectrics in DC and AC fields -	
Internal field - Clausius Mossoti	
Equation - Loss, Breakdown and strength	
of dielectric materials - Ferroelectric	
Hysteresis and applications.	

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Regulation	Pre-Revision	Post-Revision
Course Title	English - Communication Skills Lab -	English - Communication Skills Lab
	II	- II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating	PRACTICE 1: Body Language
	Practice work	
	UNIT 2: 1. Group Discussions	PRACTICE 2: Dialogues
	Practice work	
	UNIT 3: 1. Presentation Skills	PRACTICE 3: Presentation Skills
	Practice work	
	UNIT 4: 1. Interview Skills	PRACTICE 4: Group Discussion
Syllabus	Practice work	
	UNIT 5: 1. Email, 2. Curriculum Vitae	PRACTICE 5: Interviews and
	Practice work	Telephonic Interviews.
		13-28
	UNIT 6: 1. Idiomatic Expressions	PRACTICE 6: Debates
	2. Common Errors in English	
	Practice work	

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Department of Humanities and Basic Sciences

Syllabus revision Index (2017-18)

S.No	Name of the course	Course code	Percentage of syllabus change
1	English-l	171HS1T01	65%
2	Mathematics-I	171BS1T01	40%
3	Environmental Studies	171HS1T02	25%
4	Engineering Chemistry	171BS1T03	25%
5	Mathematics-II(except for ECE)	171BS1T02/171BS2T02	10%
6	Mathematics-II(ECE)	171BS1T02 -	60%
7	English Communication Skills Lab-I	171HS1L01	10%
8	English-II	171HS2T03	55%
9	Applied Physics	171BS1T04/171BS2T04	18%
10	Applied Chemistry	171BS1T05/ 171BS2T05	25%
11	Mathematics-III	171BS2T06	40%
12	Engineering Physics	171BS2T07	10%
13	English Communication Skills Lab-II	171HS2L02	40%
14	Engineering Chemistry Lab	171BS1L01/171BS2L01	20%
15	Applied Chemistry Lab	171BS1L03/171BS2L03	20%
16	Engineering Physics Lab	171BS1L02/171BS2L02	10%
17	Applied Physics Lab	171BS1L04/171BS2L04	10%

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	• English-II	English-I ·
Title	9	
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	
	Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. ' The Chief Software Architect'	3
	from English Encounters	
	2. ' Srinivasa Ramanujan' from The Great	
	Indian Scientists.	

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1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Mathematics-I	Mathematics-I .
Title	5	
Course	R161102	171BS1T01
Code		
	UNIT I: Differential equations of first	UNIT I: Differential equations of first order
	order and first degree: Linear-Bernoulli-	and first degree: Linear differential
	Exact-Reducible to exact. Applications:	equations - Bernoulli differential equation -
Syllabus	Newton's Law of cooling-Law of natural	Exact differential equations Equations
	growth and decay-Orthogonal	reducible to exact (Type-1, Type-2, Type-3,
	trajectories- Electrical circuits- Chemical	Type-4) Applications: Newton's Law of
	reactions.	cooling-Law of natural growth and decay-
		Orthogonal trajectories.
	UNIT II: Linear differential equations of	UNIT II: Linear differential equations of
	higher order: Non-homogeneous	higher order: Linear differential equations
	equations of higher order with constant	of higher order with constant coefficients
	coefficients with RHS term of the type	with RHS term of the type eax, sin ax, cos
×	eax, sin ax, cos ax, polynomials in x, eax	ax, polynomials in x, eax V(x), xV(x)-
	V(x), xV(x)- Method of Variation of	Method of Variation of parameters,
	parameters. Applications: LCR circuit,	Method of undetermined coefficients.
	Simple Harmonic motion.	*(MATLAB Exercise: Introduction to MAT
		LAB commands and Solution of Initial Value
		Problems using the command 'dsolve')
		Applications: Electric circuits, simple
-		harmonic motion.
	UNIT III: Laplace transforms: Laplace	UNIT III: Linear systems of equations: Rank
	transforms of standard functions-Shifting	of a matrix - Echelon form-Normal form -
2.4	theorems - Transforms of derivatives and	Solution of linear systems - Gauss
	integrals - Unit step function -Dirac's	elimination method - Gauss Seidal method.
	delta function- Inverse Laplace	Applications: Finding the current in
	transforms- Convolution theorem (with	electrical circuits.
	out proof). Applications: Solving ordinary	
	differential equations (initial value	
	problems) using Laplace transforms.	
	UNIT IV: Partial differentiation:	UNIT IV: Eigen values - Eigen vectors and
	Introduction- Homogeneous function-	Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain	vectors – Properties of eigen values
	ruleGeneralized Mean value theorem for	(without proof) - Cayley -Hamilton

theorem (without proof) - Inverse and single variable (without proof)-Taylor's and Mc Laurent's series expansion of powers of a matrix by using Cayley functions of two variables- Functional Hamilton theorem- Diagonalization-Quadratic forms- Reduction of quadratic dependence- Jacobian. Applications: Maxima and Minima of functions of two form to canonical form using orthogonal variables without constraints and transformation - Nature of the quadratic Lagrange's method (with constraints). form. *(MATLAB Exercise: All Basic Operations on matrices are to be implemented using MATLAB including computation of rank, computation of eigen values and eigen vectors) UNIT V: First order Partial differential UNIT V: Partial differentiation and Partial differential equations: Homogeneous equations: Formation of function-Euler's theorem-Total derivativedifferential equations by elimination of and Chain rule-Taylor's and Maclaurin's series arbitrary constants arbitrary expansion of functions of two variablesfunctions -solutions of first order linear (Lagrange) equation and nonlinear Functional dependence Jacobian. (standard types) equations. Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions -solutions of first order linear (Lagrange) equation, nonlinear (standard types) equations. Applications: Maxima and Minima of functions of two variables without constraints and Lagrange's method (with constraints). *(MATLAB Exercise: To Plot graphs of various single and multivariable functions using MATLAB and analyze their maxima and minima graphically). UNIT VI: Higher order Partial differential equations: Solutions of Linear Partial differential equations with constant coefficients. RHS term of the type e^(ax+by), sin(ax+by), cos(ax+by), x^m y^n Classification of second order partial

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differential equation

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Aditya Engineering 6.22



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1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Engineering Chemistry	Engineering Chemistry
Title		
Course	R161105	171BS1T03
Code		
	UNIT I: HIGH POLYMERS AND PLASTICS	UNIT- I: High Polymers and Plastics:
Syllabus	Polymerisation:- Introduction-	Polymerization: Introduction- Mechanism
	Mechanism of polymerization - Stereo	of polymerization - Stereo regular polymers
	regular polymers - methods of	 Physical and mechanical properties –
	polymerization (emulsion and	Plastics as engineering materials:
	suspension) -Physical and mechanical	advantages and limitations -
	properties - Plastics as engineering	Thermoplastics and Thermosetting plastics
	materials : advantages and limitations -	 Compounding and fabrication
	Thermoplastics and Thermosetting	(compression moulding, injection
	plastics - Compounding and fabrication	moulding, extrusion moulding and transfer
	(4/5 techniques)- Preparation, properties	moulding techniques) - Preparation,
	and applications of polyethene, PVC,	properties and applications of polyethene,
	Bakelite Teflon and polycarbonates	PVC, Bakelite and polycarbonates.
	Elastomers :- Natural rubber-	Elastomers - Natural rubber- compounding
	compounding and vulcanization -	and vulcanization - Synthetic rubbers: Buna
	Synthetic rubbers : Buna S, Buna N,	S, Buna N, Thiokol - Applications of
	Thiokol and polyurethanes – Applications	elastomers. Biodegradable polymers.
	of elastomers. Composite materials &	
	Fiber reinforced plastics - Biodegradable	
	polymers - Conducting polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels -	UNIT - II: Fuel Technology: Fuels:-
	Introduction - Classification - Calorific	Introduction - Classification - Calorific
	value - HCV and LCV - Dulong's formula -	value - HCV and LCV - Dulong's formula -
	Bomb calorimeter – Numerical problems	Coal — Proximate and ultimate analysis -
	- Coal — Proximate and ultimate analysis	Significance of the analyses - Liquid fuels -
	- Significance of the analyses - Liquid	Petroleum- Refining - Cracking - Synthetic
	fuels - Petroleum- Refining - Cracking -	petrol -Petrol knocking - Diesel knocking -
	Synthetic petrol –Petrol knocking – Diesel	Octane and Cetane ratings – Anti-knock
	knocking - Octane and Cetane ratings -	agents - Power alcohol - Bio-diesel -
	Anti-knock agents – Power alcohol – Bio-	Gaseous fuels - Natural gas. LPG and CNG -
	diesel - Gaseous fuels - Natural gas, LPG	Combustion - Calculation of air for the

and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Rocket fuels

combustion of a fuel – Flue gas analysis – Orsat apparatus.

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion :-Definition - Theories of Corrosion (chemical & electrochemical) - Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series – Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT - III: Electrochemical Cells Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) -Formation of galvanic cells by different metals, by concentration cells. differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Super conductors:-Type –I, Type II – Characteristics and applications Green synthesis:- Principles – 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction —
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors:-Type —
I, Type II — Characteristics and applications
Semi conductors: - Preparation of
semiconductors, working of diodes and
transistors. Green synthesis:-Principles
Liquid crystals:-Introduction — Types —
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: WATER TECHNOLOGY Hard water:- Reasons for hardness – units of hardness - determination of hardness and alkalinity - Water for steam generation - Boiler troubles – Priming and

UNIT - V: Water Technology Hard water:-Reasons for hardness – units of hardness determination of hardness andalkalinity -Water for steam generation - Boiler troubles – Priming and Foaming, Scale

Foaming, Scale formation, formation, Boiler corrosion, Caustic Boiler embrittlement - Internal treatments corrosion, Caustic embrittlement -Internal treatments - Softening of Hard Softening of Hard water: Lime - Soda water: Lime - Soda process, Zeolite process, Zeolite process and numerical process and numerical problems based problems based on these processes and Ion on these processes and Ion Exchange Exchange process - Water for drinking process - Water for drinking purposespurposes- Purification - Sterilization and Purification disinfection: Chlorination, Break point Sterilization disinfection: Chlorination, Break point chlorination and other methods - Reverse chlorination and other methods -Osmosis and Electro Dialysis. Reverse Osmosis and Electro Dialysis. UNIT VI: CHEMISTRY OF ENGINEERING MATERIALS AND FUEL CELLS Refractories: - Definition, characteristics, classification. properties. failure of refractories Lubricants: - Definition, function, Theory and mechanism of lubricants, properties (Definition and importance) Cement: -Constituents, manufacturing, hardening and setting, deterioration of cement

Insulators: - Thermal and electrical insulators Fuel cells: - Hydrogen Oxygen fuel cells - Methanol Oxygen fuel cells

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision °	Post-Revision
Course	Environmental Studies	Environmental Studies
Title	R161108	171HS1T02/171HS2T02
Course	K161108	17tHS1102/17tHS2102
Code	UNIT - I Multidisciplinary nature of	UNIT –I: Ecosystems: Scope of
	Environmental Studies: Definition, Scope	environmental studies, Structure-
		Producers, consumers and decomposers
	and Importance —Sustainability: Stockholm and Rio Summit—Global	Function – Food chain, Food web, Tropic
	THE RESERVE TO THE PARTY OF THE	structure and Energy flow in the ecosystem
	o o	la della constitución de la cons
	warming and climate change, Carbon	Ecological pyramids, nutrient recycling,
	Credits, acid rains, ozone layer depletion,	primary and secondary production,
Syllabus	population growth and explosion, effects.	ecosystem regulation. Ecological succession
	Role of information Technology in	Terrestrial ecosystem and aquatic
	Environment and human health.	ecosystem - Introduction, types, characteristic features.
	Ecosystems: Concept of an ecosystem	characteristic reatures.
	Structure and function of an ecosystem	
	Producers, consumers and decomposers.	
	- Energy flow in the ecosystem -	
	Ecological succession. – Food chains, food	
	webs and ecological pyramids	
	Introduction, types, characteristic	
	features, structure and function of Forest	
	ecosystem, Grassland ecosystem, Desert	
	ecosystem, Aquatic ecosystems.	UNIT – II: Natural Resources: Natural
	UNIT – II Natural Resources: Natural	
	resources and associated problems Forest resources – Use and over –	resources and associated problems Forest resources – Use and over – exploitation,
	exploitation, deforestation – Timber	deforestation – Timber extraction – Mining,
	extraction – Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	people Water resources – Use and over
	resources – Use and over utilization of	utilization of surface and ground water –
	surface and ground water – Floods,	Floods, drought, conflicts over water, dams
	drought, conflicts over water, dams -	- benefits and problems Mineral resources:
	benefits and problems Mineral resources:	Use and exploitation, environmental effects
	Use and exploitation, environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation. Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT 111 Biodiversity its conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts Endangered and endemic species of India Conservation of biodiversity: conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well Waste Management: being. Solid Classification, effects and Sources. control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and

UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation

		All Control of the Co
concerns. Environ and possible so Protection Act Control of Po (Prevention and control wildlife Protection)	ct-Issues involved in of environmental	of people; its problems and concerns. Global challenges Environmental ethics: Issues and possible solutions. Environmental Protection Act - Air (Prevention and Control of Pollution) Act. – Water (Prevention and control of Pollution) Act -Wildlife Protection Act - Forest Conservation Act-Issues involved in enforcement of environmental legislation Public awareness and Environmental management.
Impact Assessme various stages of and EIS, E Ecotourism, Gree business and Gree The student sho Ecosystem and individually on	uld Visit an Industry / submit a report any issues related to udies course and make a	2

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	English -I	English-II
Title	· · · · · · · · · · · · · · · · · · ·	
Course	R161101	171HS2T03
Code		
	UNIT I: 1. 'Human Resources' from	UNIT-I: I. TECHNOLOGY WITH A HUMAN
	English for Engineers and Technologists.	FACE (Detailed)
	2. 'An Ideal Family' from Panorama: A	2. AN IDEAL FAMILY (Non-Detailed)
	Course on Reading	
	UNIT 2: 1. ' Transport: Problems and	UNIT-II: 1. CLIMATE CHANGE AND
	Solutions' from English for Engineers and	HUMAN STRATEGY (Detailed)
	Technologists.	2. WAR (Non-Detailed)
	2. 'War' from 'Panorama : A Course on	
	Reading'	
	UNIT 3: 1. 'Evaluating Technology' from	UNIT-III: I. EMERGING TECHNOLOGIES
	English for Engineers and Technologists.	(Detailed)
	2. 'The Verger' from 'Panorama : A	2. THE VERGER (Non-Detailed)
	Course on Reading	
	UNIT 4: 1. 'Alternative Sources of Energy'	UNIT-IV: 1. THE SECRET OF WORK
	from English for Engineers and	(Detailed)
	Technologists.	2. THE SCARECROW (Non-Detailed)
	2. ' The Scarecrow' from Panorama : A	
	Course on Reading	
Syllabus	UNIT 5: 1. 'Our Living Environment' from	UNIT-V: 1. WORK BRINGS SOLACE
	English for Engineers and Technologists.	(Detailed)
	2. 'A Village Host to Nation' from	2. A VILLAGE LOST TO THE NATION
	Panorama : A Course on Reading	(Non-Detailed)
	UNIT 6: 1. ' Safety and Training' from	
	English for Engineers and Technologists.	
	2. 'Martin Luther King and Africa' from	
	Panorama : A Course on Reading	

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Regulation	Pre-Revision	Post-Revision
Course	Mathematics-III .	Mathematics-III
Title		,
Course	R161203	171BS2T06
Code		
	UNIT I: Linear systems of equations:	UNIT - I: Laplace transforms: Laplace
	Rank-Echelon form-Normal form -	transforms of standard functions-First
	Solution of linear systems - Gauss	Shifting theorem, Change of scale,
6 11 1	elimination - Gauss Jordon- Gauss Jacobi	Multiplication with t, Division by t -
Syllabus	and Gauss Seidal methods. Applications:	Transforms of derivatives and integrals –
	Finding the current in electrical circuits.	Unit step function –Dirac's delta function,
		Periodic functions.
	UNIT II: Eigen values - Eigen vectors and	UNIT- II: Inverse Laplace transforms:
	Quadratic forms: Eigen values - Eigen	Inverse Laplace transforms – Convolution
	vectors Properties - Cayley-Hamilton	theorem (without proof), Second shifting
	theorem - Inverse and powers of a matrix	theorem. *(MATLAB Exercise: Computing
	by using Cayley-Hamilton theorem-	Laplace transform off (t) using symbolic
	Diagonalization- Quadratic forms-	toolbox, Solving initial value problems using
	Reduction of quadratic form to canonical	'dsolve') Applications: Evaluating improper
	form – Rank - Positive, negative and semi	integrals, solving initial value problems
	definite - Index - Signature. Applications:	using Laplace transforms.
	Free vibration of a two-mass system.	
	UNIT III: Multiple integrals: Curve tracing:	UNIT - III: Multiple integrals and Beta,
	Cartesian, Polar and Parametric forms.	Gamma functions: Multiple integrals:
	Multiple integrals: Double and triple	Double and triple integrals - Change of
	integrals - Change of variables - Change	variables - Change of order of integration,
	of order of integration. Applications:	Beta and Gamma functions- Properties -
	Finding Areas and Volumes.	Relation between Beta and Gamma
		functions Applications: Finding Areas and
		Volumes.
	UNIT IV: Special functions: Beta and	UNIT - IV: Vector Differentiation: Gradient -
	Gamma functions- Properties - Relation	Directional Derivatives - Divergence- Curl -
	between Beta and Gamma functions.	Laplacian operator - Vector identities.
	Evaluation of improper integrals.	Applications: Equation of continuity,
	Applications: Evaluation of integrals.	potential surfaces
	UNIT V: Vector Differentiation: Gradient-	UNIT - V: Vector Integration: Line integral –
	Divergence- Curl - Laplacian and second	Work done - Surface and volume integrals,
	order operators -Vector identities.	Green's Theorem, Stokes Theorem and

Applications: Equation of continuity, potential surfaces	Gauss Divergence theorem (without proof) and related problems.
UNIT VI: Vector Integration: Line integral – Work done – Potential function – Area- Surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence theorems (without proof) and related problems. Applications: Work done, Force.	

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Regulation	Pre-Revision	Post-Revision
Course Title	Engineering Physics	· Engineering Physics
Course Code	R161204	171BS2T07
	UNIT-I INTERFERENCE: Principle of	UNIT-I: Interference: Principle of
	Superposition – Coherent Sources – Interference in thin films (reflection	Superposition – Coherence – Interference in thin films (reflection geometry) –
Syllabus	geometry) - Newton's rings -	Newton's rings – construction and basic
	construction and basic principle of Interferometers.	principle of Interferometer.
	UNIT-II DIFFRACTION: Fraunhofer	UNIT-II: Diffraction: Fraunhofer diffraction
	diffraction at single slit cases of double	at single slit - Cases of double slit, N-slits, &
	slit, N-slits & Circular Aperture	circular aperture, Grating equation –
	(Qualitative treatment only)-Grating	Rayleigh criterion of resolving power-
	equation - Resolving power of a grating,	Resolving power of a grating, Telescope and Microscopes.
	Telescope and Microscopes UNIT-III POLARIZATION: Types of	UNIT-III: Polarization: Types of Polarization
	Polarization-production - Nicol Prism -	production - Nicol Prism -Quarter wave
	Quarter wave plate and Half Wave plate	plateand Half Wave plateworking principle
	- Working principle of Polarimeter	of polarimeter (Sacharimeter) Lasers
	(Sacharimeter) LASERS: Characteristics-	Characteristics- Stimulated emission
	Stimulated emission - Einstein's	Einstein's Transition Probabilities - Pumpin
	Transition ProbabilitiesPumping schemes	schemes- Ruby laser – Helium Neon laser
	- Ruby laser – Helium Neon laser.	CO2 Laser-Applications
	UNIT-IV ACOUSTICS: Reverberation time -	UNIT-IV: Acoustics: Reverberation time -
	Sabine's formula – Acoustics of concert-	Sabine's formula – Acoustics of concert-
	hall. ULTRASONICS: Production	hall. Ultrasonics: Production - Ultrasonic
	Ultrasonic transducers- Non-Destructive	transducers- Non-Destructive Testing-
	Testing – Applications	Applications. Crystallography & x-ray diffraction: Basis and lattice – Crystal
		Systems – Bravais Lattice - Symmetry
		elements- Unit cellpacking fraction –
		coordination number- Miller indices –
		Separation between successive (h k l)
		planes – Bragg's law-Bragg's x-ray
		spectrometer.

	UNIT-V CRYSTALLOGRAPHY & X-RAY DIFFRACTION: Basis and lattice — Bravais systems Symmetry elements- Unit cell-packing fraction — coordination number-Miller indices — Separation between successive (h k l) planes — Bragg's law NUCLEAR ENERGY — SOURCE OF POWER: Mass defect & Binding Energy — Fusion and Fission as sources — Fast breeder Reactors.	UNIT-V: Magnetism: Classification based on Field, Temperature and order/disorder – atomic origin – Ferromagnetism-Hysteresis- applications of magnetic materials (Para &Ferro). Dielectrics: Electric Polarization – Dielectric in DC fields – Internal field –Clausius Mossoti Equation – Dielectric loss- Ferroelectric Hysteresis and applications.
• ,	UNIT-VI MAGNETISM: Classification based on Field, Temperature and order/disorder —atomic origin — Ferromagnetism- Hysteresis- applications of magnetic materials (Para &Ferro) DIELECTRICS: Electric Polarization — Dielectrics in DC and AC fields — Internal field — Clausius Mossoti Equation - Loss, Breakdown and strength of dielectric materials — Ferroelectric Hysteresis and applications.	•

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Signature of the HOD
Head of the Department
Department of H & BS
Aditya Engineering College (AS)



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	, Pre-Revision	Post-Revision
Course Title	English Communication Skills Lab-II	English Communication Skills Lab-II
Course Code	R161221	171HS2L02
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICE 2: Dialogues
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.
	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates

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Head of the Department Department of H & E. Aditya Engineering College



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Department of Agricultural Engineering

Syllabus revision Index 2017-18

S.No	Name of the course	Percentage of syllabus change	
1	English- I	65	
2	Mathematics – I	40	
3	Environmental Studies	20	
4	Engineering Chemistry	25	
5	Engineering Chemistry Lab	20	
6	Computer Programming Lab	40	
7	English_II	55	
8	Mathematics - III	40	
9	English Communication Skills Lab – II	40	
10	Theory of Machines	20	



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	• English-II	English-I ·
Title	3	
Course	R161201	171HS1T01
Code		
	UNIT 1: 1. ' The Greatest Resource-	UNIT-I: 1. IN LONDON: M.K.GANDHI
	Education' from English Encounters	(Detailed)
	2. ' A P J Abdul Kalam' from The Great	2. G.D. NAIDU (Non-Detailed)
	Indian Scientists.	
	UNIT 2: 1. ' A Dilemma' from English	UNIT-II: 1. THE KNOWLEDGE SOCIETY- APJ
	Encounters	ABDUL KALAM (Detailed)
	2. 'C V Raman' from The Great Indian	2. G.R. GOPINATH (Non-Detailed)
	Scientists.	
	UNIT 3: 1. 'Cultural Shock': Adjustments	UNIT-III: 1. THE SCIENTIFIC POINT OF VIEW
	to new Cultural Environments from	J.B.S. HALDANE (Detailed)
	English Encounters.	2. J.C. BOSE (Non-Detailed)
	2. 'Homi Jehangir Bhabha' from The Great	
	Indian Scientists.	
	. UNIT 4: 1. 'The Lottery' from English	UNIT-IV: 1. MAN'S PERIL-BERTRAND
	Encounters.	RUSSELL (Detailed)
	2. 'Jagadish Chandra Bose' from The	2. HOMI JEHANGIR BHABHA (Non-Detailed)
	Great Indian Scientists.	
	UNIT 5: 1. ' The Health Threats of Climate	UNIT-V: 1. LUCK—MARK TWAIN (Detailed)
Syllabus	Change' from English Encounters	2. A SHADOW (Non-Detailed)
	2. ' Prafulla Chandra Ray' from The Great	
	Indian Scientists.	
	UNIT 6: 1. 'The Chief Software Architect'	,
	from English Encounters	
	2. ' Srinivasa Ramanujan' from The Great	
	Indian Scientists.	

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision
Course Title	Mathematics-I	Mathematics-I ·
Course Code	R161102	171BS1T01
Syllabus	UNIT I: Differential equations of first order and first degree: Linear-Bernoulli-Exact-Reducible to exact. Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories- Electrical circuits- Chemical reactions.	UNIT I: Differential equations of first order and first degree: Linear differential equations - Bernoulli differential equation - Exact differential equations reducible to exact (Type-1, Type-2, Type-3, Type-4) Applications: Newton's Law of cooling-Law of natural growth and decay-Orthogonal trajectories.
	UNIT II: Linear differential equations of higher order: Non-homogeneous equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)- Method of Variation of parameters. Applications: LCR circuit, Simple Harmonic motion.	UNIT II: Linear differential equations of higher order: Linear differential equations of higher order with constant coefficients with RHS term of the type eax, sin ax, cos ax, polynomials in x, eax V(x), xV(x)-Method of Variation of parameters, Method of undetermined coefficients. *(MATLAB Exercise: Introduction to MAT LAB commands and Solution of Initial Value Problems using the command 'dsolve') Applications: Electric circuits, simple harmonic motion.
	UNIT III: Laplace transforms: Laplace transforms of standard functions-Shifting theorems - Transforms of derivatives and integrals — Unit step function —Dirac's delta function—Inverse Laplace transforms— Convolution theorem (with out proof). Applications: Solving ordinary differential equations (initial value problems) using Laplace transforms. UNIT IV: Partial differentiation: Introduction—Homogeneous function—	UNIT III: Linear systems of equations: Rank of a matrix - Echelon form-Normal form - Solution of linear systems - Gauss elimination method - Gauss Seidal method. Applications: Finding the current in electrical circuits. UNIT IV: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen
	Euler's theorem-Total derivative-Chain ruleGeneralized Mean value theorem for	vectors – Properties of eigen values (without proof) – Cayley -Hamilton

single variable (without proof)-Taylor's	theorem (without proof) - Inverse and
and Mc Laurent's series expansion of	powers of a matrix by using Cayley -
functions of two variables- Functional	Hamilton theorem- Diagonalization-
dependence- Jacobian. Applications:	Quadratic forms- Reduction of quadratic
Maxima and Minima of functions of two	form to canonical form using orthogonal
variables without constraints and	transformation – Nature of the quadratic
Lagrange's method (with constraints).	form. *(MATLAB Exercise: All Basic
	Operations on matrices are to be
	implemented using MATLAB including
	computation of rank, computation of eigen
	values and eigen vectors)
UNIT V: First order Partial differential	UNIT V: Partial differentiation and Partial
equations: Formation of partial	differential equations: Homogeneous
differential equations by elimination of	function-Euler's theorem-Total derivative-
arbitrary constants and arbitrary	Chain rule-Taylor's and Maclaurin's series
functions -solutions of first order linear	expansion of functions of two variables-
(Lagrange) equation and nonlinear	Functional dependence Jacobian.
(standard types) equations.	Formation of partial differential equations
	by elimination of arbitrary constants and
	arbitrary functions -solutions of first order
	linear (Lagrange) equation, nonlinear
	(standard types) equations. Applications:
	Maxima and Minima of functions of two
	variables without constraints and
	Lagrange's method (with constraints).
	*(MATLAB Exercise: To Plot graphs of
	various single and multivariable functions
	using MATLAB and analyze their maxima
	and minima graphically).
UNIT VI: Higher order Partial differential	-
equations: Solutions of Linear Partial	•
differential equations with constant	
coefficients. RHS term of the type	
e^(ax+by), sin(ax+by), cos(ax+by), x^m	
y^n Classification of second order partial	V
differential equation	

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Department of Humanities & Basic Sciences

Regulation	Prè-Revision	Post-Revision '
Course	Environmental Studies	Environmental Studies
Title		
Course	R161108	171HS1T02/171HS2T02
Code		
	UNIT - I Multidisciplinary nature of	UNIT -I: Ecosystems: Scope of
	Environmental Studies: Definition, Scope	environmental studies, Structure-
	and Importance –Sustainability:	Producers, consumers and decomposers
	Stockholm and Rio Summit-Global	Function – Food chain, Food web, Tropic
	Environmental Challenges: Global	structure and Energy flow in the ecosystem
	warming and climate change, Carbon	Ecological pyramids, nutrient recycling,
	Credits, acid rains, ozone layer depletion,	primary and secondary production,
C . II . L	population growth and explosion, effects.	ecosystem regulation. Ecological succession
Syllabus	Role of information Technology in	Terrestrial ecosystem and aquatic
	Environment and human health.	ecosystem - Introduction, types,
	Ecosystems: Concept of an ecosystem	characteristic features.
	Structure and function of an ecosystem	
	Producers, consumers and decomposers.	
	- Energy flow in the ecosystem -	
	Ecological succession. – Food chains, food	
	webs and ecological pyramids	
	Introduction, types, characteristic	
	features, structure and function of Forest	
	ecosystem, Grassland ecosystem, Desert	
	ecosystem, Aquatic ecosystems.	
	UNIT - II Natural Resources: Natural	UNIT - II: Natural Resources: Natural
	resources and associated problems	resources and associated problems Forest
	Forest resources - Use and over -	resources – Use and over – exploitation,
	exploitation, deforestation - Timber	deforestation - Timber extraction - Mining,
	extraction - Mining, dams and other	dams and other effects on forest and tribal
	effects on forest and tribal people Water	people Water resources – Use and over
	resources - Use and over utilization of	utilization of surface and ground water -
	surface and ground water - Floods,	Floods, drought, conflicts over water, dams
	drought, conflicts over water, dams -	- benefits and problems Mineral resources:
	benefits and problems Mineral resources:	Use and exploitation, environmental effects
	Use and exploitation, environmental	of extracting and using mineral resources

effects of extracting and using mineral resources, Sustainable mining of Granite, Literate, Coal, Sea and River sands. Food resources: World food problems, changes caused by non-agriculture activitieseffects of modern agriculture, fertilizerpesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Food resources: World food problems, changes caused by non-agriculture activities effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources vs oil and natural gas extraction. Land resources: Land as a resource, land degradation, Wasteland reclamation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT - III Biodiversity and conservation: Definition: genetic, species and ecosystem diversity- classification -Value of biodiversity: consumptive use, productive use, social IBiodiversity at national and local levels. India as a megadiversity nation - Hot-spots biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts -Endangered and endemic species of India of biodiversity: Conservation conservation of biodiversity.

UNIT – III: Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity classification Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India – Conservation of biodiversity

UNIT - IV Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being. Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e waste management.

UNIT – IV: Environmental Pollution:
Definition, Cause, effects and control
measures of Air pollution, Water pollution,
Soil pollution, Noise pollution, Nuclear
hazards. Role of an individual in prevention
of pollution. - Pollution case studies,
Sustainable Life Style. Solid Waste
Management: Sources, Classification,
effects and control measures of urban and
industrial solid wastes. Consumerism and
waste products, Biomedical, Hazardous and
e – waste management.

UNIT – V Social Issues and the Environment: Urban problems related to energy -Water conservation, rain water harvesting-Resettlement and UNIT – V: Social Issues and the Environment Urban problems related to energy -Water conservation, rain water harvesting Resettlement and rehabilitation

rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. —Water (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act-Issues involved in enforcement of environmental legislationPublic awareness.	of people; its problems and concerns. Global challenges Environmental ethics: Issues and possible solutions. Environmental Protection Act - Air (Prevention and Control of Pollution) Act. – Water (Prevention and control of Pollution) Act -Wildlife Protection Act - Forest Conservation Act-Issues involved in enforcement of environmental legislation Public awareness and Environmental management.
UNIT – VI Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS, Environmental audit. Ecotourism, Green Campus – Green business and Green politics. The student should Visit an Industry / Ecosystem and submit a report individually on any issues related to Environmental Studies course and make a power point presentation.	,

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Department of Humanities & Basic Sciences

Regulation	' Pre-Revision	Post-Revision ' Engineering Chemistry	
Course Title	Engineering Chemistry		
Course Code	R161105	171BS1T03	
Syllabus	UNIT I: HIGH POLYMERS AND PLASTICS Polymerisation:- Introduction- Mechanism of polymerization - Stereo regular polymers - methods of polymerization (emulsion and suspension) -Physical and mechanical properties - Plastics as engineering materials: advantages and limitations - Thermoplastics and Thermosetting plastics - Compounding and fabrication (4/5 techniques)- Preparation, properties and applications of polyethene, PVC, Bakelite Teflon and polycarbonates Elastomers: Natural rubber- compounding and vulcanization - Synthetic rubbers: Buna S, Buna N, Thiokol and polyurethanes - Applications of elastomers. Composite materials & Fiber reinforced plastics - Biodegradable polymers - Conducting polymers.	UNIT- I: High Polymers and Plastics: Polymerization: Introduction- Mechanism of polymerization - Stereo regular polymers - Physical and mechanical properties - Plastics as engineering materials: advantages and limitations — Thermoplastics and Thermosetting plastics - Compounding and fabrication (compression moulding, injection moulding, extrusion moulding and transfer moulding techniques) - Preparation, properties and applications of polyethene, PVC, Bakelite and polycarbonates. Elastomers — Natural rubber- compounding and vulcanization — Synthetic rubbers: Buna S, Buna N, Thiokol — Applications of elastomers. Biodegradable polymers.	
	UNIT II: FUEL TECHNOLOGY Fuels – Introduction – Classification – Calorific value - HCV and LCV – Dulong's formula – Bomb calorimeter – Numerical problems – Coal — Proximate and ultimate analysis – Significance of the analyses – Liquid fuels – Petroleum- Refining – Cracking – Synthetic petrol –Petrol knocking – Diesel knocking - Octane and Cetane ratings – Anti-knock agents – Power alcohol – Bio- diesel – Gaseous fuels – Natural gas, LPG	UNIT - II: Fuel Technology: Fuels:- Introduction – Classification – Calorific value - HCV and LCV – Dulong's formula – Coal — Proximate and ultimate analysis – Significance of the analyses – Liquid fuels – Petroleum- Refining – Cracking – Synthetic petrol –Petrol knocking – Diesel knocking - Octane and Cetane ratings – Anti-knock agents – Power alcohol – Bio-diesel – Gaseous fuels – Natural gas. LPG and CNG - Combustion – Calculation of air for the	

and CNG – Combustion – Calculation of air for the combustion of a fuel – Flue gas analysis – Orsat apparatus – Numerical problems on combustion. Explosives:-Rocket fuels

combustion of a fuel – Flue gas analysis – Orsat apparatus.

UNIT III: ELECTROCHEMICAL CELLS AND CORROSION Galvanic cells - Reversible and irreversible cells - Single electrode potential - Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell -Ni-Cd cells - Ni-Metal hydride cells - Li cells - Zinc - air cells. Corrosion :-Definition - Theories of Corrosion (chemical & electrochemical) - Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion -Passivity of metals - Pitting corrosion -Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Design and material selection - Cathodic protection - Protective coatings: - Surface preparation - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Electroless Tinning, Electroplating, plating).

UNIT - III: Electrochemical Cells Corrosion: Galvanic cells - Reversible and irreversible cells - Single electrode potential- Electro chemical series and uses of this series- Standard electrodes (Hydrogen and Calomel electrodes) -Concentration Cells - Batteries: Dry Cell - Li cells - Zinc - air cells. Corrosion:- Definition - Theories of Corrosion (electrochemical) -Formation of galvanic cells by different metals, by concentration cells, by differential aeration and waterline corrosion - Passivity of metals - Pitting corrosion - Galvanic series - Factors which influence the rate of corrosion - Protection from corrosion - Cathodic protection -Protective coatings: - Metallic (cathodic and anodic) coatings - Methods of application on metals (Galvanizing, Tinning, Electroplating, Electroless plating).

UNIT IV: CHEMISTRY OF ADVANCED MATERIALS Nano materials:- Introduction – Sol-gel method & chemical reduction method of preparation – Characterization by BET method and TEM methods - Carbon nano tubes and fullerenes: Types, preparation, properties and applications Liquid crystals:- Introduction – Types – Applications Super conductors:-Type –I, Type II – Characteristics and applications Green synthesis:- Principles – 3or 4 methods of synthesis with examples – R4M4 principles

UNIT - IV: Chemistry of Advanced
Materials: Nano materials:-Introduction –
Sol-gel method - Carbon nano tubes and
fullerenes: Types, preparation, properties
and applications. Super conductors:-Type –
I, Type II – Characteristics and applications
Semi conductors: - Preparation of
semiconductors, working of diodes and
transistors. Green synthesis:-Principles
Liquid crystals:-Introduction – Types –
Applications Fuel cells: - Introduction - cell
representation, H2-O2fuel cell: Design and
working, advantages and Limitations. Types
of fuel cells: methanol-oxygen fuel cells.

UNIT V: WATER TECHNOLOGY Hard water:- Reasons for hardness – units of hardness - determination of hardness and alkalinity - Water for steam generation - Boiler troubles – Priming and

UNIT - V: Water Technology Hard water:-Reasons for hardness – units of hardness determination of hardness andalkalinity -Water for steam generation - Boiler troubles – Priming and Foaming, Scale

Foaming, Scale formation. Boiler corrosion, Caustic embrittlement -Internal treatments - Softening of Hard water : Lime - Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes-Purification Sterilization disinfection: Chlorination, Break point chlorination and other methods -Reverse Osmosis and Electro Dialysis. UNIT VI: CHEMISTRY OF ENGINEERING MATERIALS AND FUEL CELLS Refractories:

formation, Boiler corrosion, Caustic embrittlement - Internal treatments - Softening of Hard water: Lime – Soda process, Zeolite process and numerical problems based on these processes and Ion Exchange process - Water for drinking purposes - Purification – Sterilization and disinfection: Chlorination, Break point chlorination and other methods – Reverse Osmosis and Electro Dialysis.

UNIT VI: CHEMISTRY OF ENGINEERING MATERIALS AND FUEL CELLS Refractories:
- Definition, characteristics, classification, properties, failure of refractories Lubricants: - Definition, function, Theory and mechanism of lubricants, properties (Definition and importance) Cement: - Constituents, manufacturing, hardening and setting, deterioration of cement Insulators: - Thermal and electrical insulators Fuel cells: - Hydrogen Oxygen fuel cells - Methanol Oxygen fuel cells

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Department of Humanities & Basic Sciences

Regulation	Pre-Revision	Post-Revision	
Course Title	· Engineering/Applied Chemistry Lab	Engineering Chemistry Lab	
Course Code	R161227/ R161118	171BS1L01	
	1. Introduction to Chemistry laboratory – Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc	Exercise 1: Introduction to Chemistry laboratory – Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc.	
	Trial experiment - Determination of HCl using standard Na2CO3 solution	Exercise 2: Trial experiment - Determination of HCl using standard Na2CO3 solution.	
Syllabus	3. Determination of alkalinity of a sample containing Na2CO3 and NaOH.	Exercise 3: Preparation of Phenol - Formaldehyde resin (Bakelite).	
	4. Determination of KMnO4 using standard Oxalic acid solution5. Determination of Ferrous iron using	Exercise 4: Determination of KMnO4 using standard Oxalic acid solution. Exercise 5: Determination of ferrous iron	
75	standard K2Cr2O7 solution 6. Determination of Copper using	using standard K2Cr2O7 solution. Exercise 6: Preparation of Bio-Diesel.	
	7. Determination of temporary and permanent hardness of water using standard EDTA solution.	Exercise 7: Determination of temporary and permanent hardness of water using standard EDTA solution.	
	Determination of Copper using standard EDTA solution	Exercise 8: Determination of Copper using standard EDTA solution.	
	 Determination of Iron by a Colorimetric method using thiocynate as reagent. 	Exercise 9: Determination of Iron by a Colorimetric method using thiocynate as reagent.	
	10. Determination of pH of the given sample solution using pH meter.	Exercise 10: Determination of pH of the given sample solution using pH meter.	
	11. Conductometric titration between strong acid and strong base.	Exercise 11: Conduct metric titration between strong acid and strong base.	
	Conductometric titration between strong acid and weak base. Potentiometric titration between	Exercise 12: Conduct metric titration between strong acid and weak base. Exercise 13: Potentiometric titration	
	strong acid and strong base. 14. Potentiometric titration between	between strong acid and strong base. Exercise 14: Potentiometric titration	

strong acid and weak base.	between strong acid and weak base.
15. Determination of Zinc using standard EDTA solution.	Exercise 15: Determination of Zinc using standard EDTA solution.
16. Determination of Vitamin – C.	Exercise 16: Determination of Vitamin - C.

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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision	
Course Title	Computer Programming Lab	Computer Programming Lab	
Course Code	R161119	171ES1L01	
	Exercise - 1 Basics a) What is an OS Command, Familiarization of Editors - vi, Emacs b) Using commands like mkdir, ls, cp, mv, cat, pwd, and man c) C Program to Perform Adding, Subtraction, Multiplication and Division of two numbers From Command line	Exercise - 1 Introduction to C Programming 1.1) Introduction about Editors – Turbo, vi, Emacs 1.2) C Program to Perform Addition, Subtraction, Multiplication and Division of two numbers from Command line 1.3) Write a C Program to Calculate area of a Triangle using Heron's formula.	
Syllabus	Exercise - 2 Basic Math a) Write a C Program to Simulate 3 Laws at Motion b) Write a C Program to convert Celsius to Fahrenheit and vice versa	Exercise - 2: Basic Math 2.1) Write a C Program to Find Whether the Given Year is a Leap Year or not. 2.2) Write a C Program to convert Celsius to Fahrenheit and vice versa. 2.3) Write a C Program to find largest of three numbers using ternary operator.	
	Exercise - 3 Control Flow - I a) Write a C Program to Find Whether the Given Year is a Leap Year or not. b) Write a C Program to Add Digits & Multiplication of a number	Exercise - 3: Control Flow - I 3.1) Write a C program to find the roots of a Quadratic Equation. 3.2) Write a C Program to make a simple Calculator to Add, Subtract, Multiply or Divide Using switchcase. 3.3) Scenario - 1 ATM PIN GENERATION: Aditya purchased a credit card. He has to generate a PIN number to access the ATM and Net banking for which OTP was sent to his registered mobile number. Using this OTP number he has	

to generate ATM PIN number. After generating PIN number, he can use it for further transactions. Maximum login he can make is 3 times. Sample Input: OTP: 6732 If valid Enter PIN: 8858 Confirm your PIN: 8858 Sample output: valid/Invalid PIN generated successfully. Note: OTP is hard coded. 3.4) Scenario - 2 RESET PASSWORD: Sindhuja was using Syndicate Bank's Online Account. She wanted to pay her bills through Online. But she forget her password. Now she has to reset the password. For resetting the password, she has to select reset option from the Menu. NOTE: using switch case. Sample input: 1. Fast withdrawal 2. Mini Statement 3. Balance Enquiry 4. Reset Password Enter your choice: 4 Sample Output: Reset password: New password: ***** Confirm password: Exercise - 4 Control Flow - II Exercise -4: a) Write a C Program to Find Whether Control Flow - II 4.1) Write a C Program to Find Whether the Given Number is the Given Number is i) Prime Number ii) Armstrong Number i) Prime Number b) Write a C program to print Floyd ii) Armstrong Number 4.2) Write a C program to print Floyd Triangle c) Write a C Program to print Pascal Triangle Triangle 4.3) Write a C Program to print Pascal Triangle Exercise - 5 Functions Exercise - 5: Control Flow - III a) Write a C Program demonstrating of parameter passing in Functions and 5.1) Write a C program to find the sum

returning values. b) Write a C Program illustrating	of individual digits of a positive integer.
Fiberessi Festerial and P	
Fibonacci, Factorial with Recursion without Recursion.	whether given number is palindrome or not.
	5.3) Write a C program to read two
	numbers, x and n, and then compute the
	sum of the geometric progression
	1+x+x2 +x3 ++xn.
	5.4) Scenario - 3 Student Attendance
	report Generation:
	Some of the school staff had failed to
	maintain the attendance of the students.
	causing lack of essential records related
	to students attendance that should be
	submitted in a parents meet. The school
	management has decided to automate
	the process in order to maintain the
	attendance of every student effectively.
	You are asked to write a program to the
	above scenario and display whether the
	student is allowed to write the Exam or
	not.
Exercise - 6 Control Flow - III	Exercise 6:
a) Write a C Program to make a	
simple Calculator to Add, Subtract,	Demonstration of arrays
Multiply or Divide Using	6.1) Linear Search.
switchcase	6.2) Bubble Sort.
b) Write a C Program to convert	6.3) Operations on Matrix.
decimal to binary and hex (using	
switch call function the	Red FM has launched a program called
function)	Celebrity of the week in their channel.
	Listeners are given a toll free number
	where they can listen to list of
	celebrities. Listeners can choose their
	favourite celebrity from the list and vote
	for him/her. The votes are validated
	from Monday to Saturday. The one with
	highest votes is called as "Celebrity of
1	the Week" and his/her songs are played
	in the program, which is aired on
	Sundays. Now write a program to find
Exercise – 7 Functions - Continued	the celebrity of the week
	Exercise – 7:
Write a C Program to compute the	
values of x and cos x and e^x	A STATE OF THE PARTY OF THE PAR
values using Series	parameter passing in Functions and

expansion. (use factorial function)	returning values. 7.2) Write a C Program to find Fibonacci, Factorial of a number with Recursion and without Recursion. 7.3) Scenario - 5 SELF DRIVE RENTAL. Sadiq and his friends are going to Banglore. But they don't have a vehicle in Banglore. For that they go to rental cars to take car for rent. You have find out what is total amount of car's rent. The car's rentals and rules are as follows. i) Minimum booking is 4. ii) There are 3 types of cars iii) There are 3 categories in cars rental FOR SWIFT. In LTTE 5 kms are free for one hour and Rs.70 per one hour, if they exceed 5kmph, then Rs.12 per km. In CLASS, 10 kms are free for one hour and Rs.90 per one hour, if they exceed 10kmph, then Rs.12 per km. In XL, 15 kms are free for one hour and Rs.110 per one hour, if they exceed 15kmph, then Rs.12 per km.
Exercise – 8 Arrays Demonstration of arrays a) Search-Linear. b) Sorting-Bubble, Selection. c) Operations on Matrix.	Exercise - 8: Strings 8.1) Implementation of string manipulation operations with library function. 8.2) Implementation of string manipulation operations without library function. i. copy ii. concatenate iii. length iv. compare i. copy ii. concatenate iii. length iv. compare 8.3) Verify whether the given string is a palindrome or not 8.4) Scenario - 6 Word with

		· ·
		Obesity:
		Jeeth is a fun loving and active
	- N	boy. He likes to play with words and
		numbers. One day Jeeth and his friends
		attended a seminar, which was
		conducted in his school. The Seminar
		was about "Causes of obesity in children
		and its effects". Jeeth and his friend Ram are not interested in listening to the
		seminar, so he thought of giving a
		puzzle to Ram. Jeeth gave some words
		to Ram and wanted him to find the word
	- 2 -	with Obesity. Ram was confused and
		asking your help. Write a program to
		find the weights of the words and
		display the word with highest weight
	= 1 = 20 1	(word with obesity).
	Exercises - 9 Structures	Exercise - 9:
	a)Write a C Program to Store	Arrays and Pointers
	Information of a Movie Using	9.1) Write a C Program to Access
	Structure	Elements of an Array Using Pointer
	b)Write a C Program to Store Information Using Structures with	9.2) Write a C Program to find the sum
	Dynamically Memory	of numbers with arrays and pointers.
	Allocation	1.17 = 1.772= 7
	c) Write a C Program to Add Two	- n v/s
	Complex Numbers by Passing	
	Structure to a Function	
	Exercise - 10 Arrays and Pointers	Exercise - 10:
	a)Write a C Program to Access	Dynamic Memory Allocations
	Elements of an Array Using Pointer	10.1) Write a C program to find sum of
	b) Write a C Program to find the sum	n elements entered by user. To perform
	of numbers with arrays and pointers.	this program, allocate memory
		dynamically using malloc () function.
		10.2) Write a C program to find sum of n
		elements entered by user. To perform
		this program, allocate memory
		dynamically using calloc () function.
		Understand the difference between the
	B	above two programs
	Exercise - 11 Dynamic Memory	Exercises – 11:
	Allocations	Structures:
	a) Write a C program to find sum of n elements entered by user. To perform	11.1) Write a C Program to Store Information of a book Using Structure
	this program,	11.2) Write a C Program to Store
L	1 MIN PIVETUILS	Tital write a C Hogram to Store

allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program,

allocate memory dynamically using calloc () function. Understand the difference between the above two programs

Information Using Structures with Dynamically Memory Allocation

11.3) Write a C Program to Add Two Complex Numbers by Passing Structure to a Function

11.4) Scenario – 7 Library Management Shilpa student of PGEC got the Library Card. She wants to lend the books from the Library. The college gave two cards to each and every student. The students can lend only two books at a time and it has to be returned back after 15 days. If the books are not returned late fee will be collected for no. of days the books were returned after the due date. Late fee per day is Rs.50/=

Sample Input.

Enter the name of student, Roll No. Branch, Section, Year, DOL, DOR, Sample output

No. of days returned after the due date =

Late fee per day = Rs. 50

Fine paid by the student is 5 * 50 = 250.

Exercise – 12 Strings

- a) Implementation of string manipulation operations with library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare
- b) Implementation of string manipulation operations without library function.
- i) copy
- ii) concatenate
- iii) length
- iv) compare

Exercise -12:

Files

- 12.1) Write a C program to open a file and to print the contents of the file on screen.
- 12.2) Write a C program to copy content of one file to another file.
- 12.3) Write a C program to merge two files and store content in another file.
- 12.4) Scenario 8 Student Information System Using Files:

Lakshya International school was recently established and having large no of admissions. The school management wanted the Student information to be computerized and wanted to maintain in a simple and in effective manner. You are asked to develop Student Information System using Files to perform the following tasks

1. Add New Student

2. Update Existing Student

	3. Delete Existing Student 4. Retrieve A Particular/All Students Sample Input: Choose the task you want to perform: 1. Add 2. Update 3. Delete 4. Retrieve Your choice: 1 Enter student details: Name: Akhil Age: 5 Class: 1 Sample Output: Student details added
Exercise -13 Files a) Write a C programming code to open a file and to print it contents on screen. b) Write a C program to copy files	
Exercise - 14 Files Continued a) Write a C program merges two files and stores their contents in another file. b) Write a C program to delete a file.	
Exercise – 15 a) System Assembling, Disassembling and identification of Parts / Peripherals. b) Operating System Installation-Install Operating Systems like Windows, Linux along with necessaryDevice Drivers.	
Exercise – 16 a) MS-Office / Open Office i) Word - Formatting, Page Borders, Reviewing, Equations, symbols. ii) SpreadSheet - organize data, usage of formula, graphs, charts. iii) Powerpoint - features of power point, guidelines for preparing an effective presentation. b) Network Configuration & Software Installation-Configuring TCP/IP, Proxy, and firewall settings. Installing application software, system software & tools.	

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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision	
Course Title	English -I	English-II	
Course Code	R161101	171HS2T03	
	UNIT I: 1. 'Human Resources' from English for Engineers and Technologists. 2. 'An Ideal Family' from Panorama: A Course on Reading	UNIT-I: I. TECHNOLOGY WITH A HUMAN FACE (Detailed) 2. AN IDEAL FAMILY (Non-Detailed)	
	UNIT 2: 1. ' Transport: Problems and Solutions' from English for Engineers and Technologists. 2. 'War' from 'Panorama : A Course on Reading'	UNIT-II: I. CLIMATE CHANGE AND HUMAN STRATEGY (Detailed) 2. WAR (Non-Detailed)	
	UNIT 3: 1. 'Evaluating Technology' from English for Engineers and Technologists. 2. 'The Verger' from 'Panorama : A Course on Reading	UNIT-III: 1. EMERGING TECHNOLOGIE: (Detailed) 2. THE VERGER (Non-Detailed)	
	UNIT 4: 1. 'Alternative Sources of Energy' from English for Engineers and Technologists. 2. ' The Scarecrow' from Panorama: A	UNIT-IV: 1. THE SECRET OF WORK (Detailed) 2. THE SCARECROW (Non-Detailed)	
Syllabus	Course on Reading UNIT 5: 1. 'Our Living Environment' from English for Engineers and Technologists. 2. 'A Village Host to Nation' from Panorama: A Course on Reading	UNIT-V: 1. WORK BRINGS SOLACE (Detailed) 2. A VILLAGE LOST TO THE NATION (Non-Detailed)	
	UNIT 6: 1. ' Safety and Training' from English for Engineers and Technologists. 2. 'Martin Luther King and Africa' from Panorama: A Course on Reading		

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Regulation	Pre-Revision	Post-Revision	
Course Mathematics-III		Mathematics-III	
Title		2	
Course Code	R161203	171BS2T06	
	UNIT I: Linear systems of equations: Rank-Echelon form-Normal form – Solution of linear systems – Gauss elimination - Gauss Jordon- Gauss Jacobi	UNIT - I: Laplace transforms: Laplace transforms of standard functions-First Shifting theorem, Change of scale, Multiplication with t, Division by t	
Syllabus	and Gauss Seidal methods. Applications: Finding the current in electrical circuits.	Transforms of derivatives and integrals – Unit step function –Dirac's delta function, Periodic functions.	
	UNIT II: Eigen values - Eigen vectors and Quadratic forms: Eigen values - Eigen vectors— Properties — Cayley-Hamilton theorem - Inverse and powers of a matrix by using Cayley-Hamilton theorem-Diagonalization— Quadratic forms-Reduction of quadratic form to canonical form — Rank - Positive, negative and semi definite - Index — Signature. Applications: Free vibration of a two-mass system. UNIT III: Multiple integrals: Curve tracing: Cartesian, Polar and Parametric forms.	UNIT- II: Inverse Laplace transforms: Inverse Laplace transforms – Convolution theorem (without proof), Second shifting theorem. *(MATLAB Exercise: Computing Laplace transform off (t) using symbolic toolbox, Solving initial value problems using 'dsolve') Applications: Evaluating improper integrals, solving initial value problems using Laplace transforms. UNIT - III: Multiple integrals and Beta Gamma functions: Multiple integrals	
	Multiple integrals: Double and triple integrals – Change of variables – Change of order of integration. Applications: Finding Areas and Volumes.	Double and triple integrals – Change of variables – Change of order of integration Beta and Gamma functions- Properties Relation between Beta and Gamma functions Applications: Finding Areas and Volumes.	
	UNIT IV: Special functions: Beta and Gamma functions- Properties - Relation between Beta and Gamma functions. Evaluation of improper integrals. Applications: Evaluation of integrals. UNIT V: Vector Differentiation: Gradient-Divergence- Curl - Laplacian and second	UNIT - IV: Vector Differentiation: Gradient - Directional Derivatives - Divergence - Curl - Laplacian operator - Vector identities. Applications: Equation of continuity, potential surfaces UNIT - V: Vector Integration: Line integral - Work done - Surface and volume integrals,	
		[] To the control of	



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Department of Humanities & Basic Sciences

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision '	Post-Revision	
Course English Communication Skills Lab-II Title		English Communication Skills Lab-II	
Course Code	R161221	171HS2L02	
	UNIT 1: 1. Debating Practice work	PRACTICE 1: Body Language	
Syllabus	UNIT 2: 1. Group Discussions Practice work	PRACTICÉ 2: Dialogues	
	UNIT 3: 1. Presentation Skills Practice work	PRACTICE 3: Presentation Skills	
	UNIT 4: 1. Interview Skills Practice work	PRACTICE 4: Group Discussion	
	UNIT 5: 1. Email, 2. Curriculum Vitae Practice work	PRACTICE 5: Interviews and Telephonic Interviews.	
£	UNIT 6: 1. Idiomatic Expressions 2. Common Errors in English Practice work	PRACTICE 6: Debates	

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S.No.	Regulation	Pre-Revision	Post-Revision
	Course Title	Theory of Machines	Theory of Machines
11	Course Code	R1622353	171ES2T08
	Syllabus	Unit—I: Introduction, Element, Link, Pairs. Kinematics Chains and Pairs— Types, lower and higher pairs. Mechanism — types and inversions. Lower and higher pairs. Four bar chain, slider crank chain and their inversions— Determination of velocity and acceleration using graphical (relative velocity and acceleration) methods. Instantaneous center— Lindring. Unit II Types of gears, Law of gearing. Velocity of sliding between two teeth in mesh Involute and cucloidal profile for gear teeth. Spur gear, nomenclature, interference and undercutting. Introduction to helical, spiral, bevel and worm gear. Simple, compound, reverted and epicyclical gear trains— Determining the velocity ratio by tabular method. Turning moment Diagrams, Coefficient of fluctuation of speed and energy	Unit-I: Introduction, Elements, links, pairs, kinematics pairs chains and mechanisms. Classification of pairs and mechanisms. Lower and higher pairs. Four bar chain, slider crank chain and their inversions. Determination of velocity and acceleration using graphical (relative velocity and acceleration) method. Unit II Belt drives, types of drives. Belt materials, Length of belt, Power transmission, Velocity ratio Effect of centrifugal tension Creep and slip on power transmission. Chain drives. Types of friction, laws of dry friction, Rolling friction, Antifriction bearings.
	u	Unit-III:	Unit-III: Types of gears. Law of gearing,
			velocity of sliding between two teeth
		drives. Belt materials, Length of	in mesh. Involute and cycloidal
		belt, Power transmitted, Velocity	profile for gear teeth. Spur gear,
		ratio, Belt size for flat and v-belts	nomenclature, interference and
			undercutting. Introduction to helical, spiral, bevel and worm gear. Simple,
			compound, reverted, and epicyclic
			trains. Determining velocity ratio by
		·	tabular method.

Units-IV:	Units-IV:
Effect of centrifugal tension, creep	Types of governors. constructional
and slop on power transmission,	details and analysis of
chain drives Types of friction,	Watt/Centrifugal governors - spread
Laws of dry fiction, Friction of	of governors. Effect of friction
pivots and collars. Single disc,	Sensitiveness, stability, hunting
Multiple disc and cone clutches.	isochronisms, power and effort of a
Rolling friction, Anti-friction	governor.
bearings	
Unit -V	Unit -V
Types of Governors,	Static and dynamic balancing.
Constructional details and analysis	Balancing of rotating masses in one
of Watt, Porter and Proell	and different planes. Partial primary
governors – Spread of governors.	balancing of reciprocating masses.
Effect of friction, controlling	Weight of flywheel, flywheel
force, curves, sensitiveness,	applications.
stability, hunting, Isochronism's,	
power and effort of a governor,	
Unit-VI:	
Static and dynamic balancing,	
Balancing of rotating masses in	
one and different planes, Partial	<u>a</u>
primary balancing of reciprocating	
masses. Cams and Foversees	

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Department of Civil Engineering

Syllabus revision Index for the Academic Year 2017-2018 M.Tech Structural Engineering

S.No	Name of the course	Percentage of syllabus change
1	Experimental Analysis	20
	172SE1E01	
2	Structural Optimization	30
	172SE1E02	
3	Analysis & Design of Tall Buildings	20
	172SE1E05	
4	Plastics Analysis & Designing	20
	172SE1E06	

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Department of Civil Engineering

Regulatio	Pre-Revision	Post-Revision
n		
Course	EXPERIMENTAL STRESS	EXPERIMENTAL STRESS
Title	ANALYSIS	ANALYSIS
Course	172SE1E01	172SE1E01
Code		
	UNIT-I Introduction and Strain Measurement Methods Model & Prototype Dimensional analysis-Factors influencing model design — Scale factors and Model material properties — Methods of model design. Definition of strain and its relation to experimental determinations — properties of strain gauge systems — Mechanical, Optical, Acoustic and Pneumatic types.	Introduction and Strain Measurement Methods Model & Prototype Dimensional analysis-Factors influencing model design – Scale factors and Model material properties – Methods of model design. Definition of strain and its relation to experimental determinations - properties of strain gauge systems – Mechanical, Optical, Acoustic and Pneumatic types.
Syllabus	UNIT-II Electrical Resistance Strain Gauges Introduction – gauge construction strain gauge adhesives - mounting methods – gauge sensitivities and gage factor – performance characteristics of wire and foil strain gauges – environmental effects. Analysis of strain gauge data – the three-element rectangular rosette – the delta rosette – correction for transverse sensitivity.	UNIT-II Electrical Resistance Strain Gauges Introduction – gauge construction strain gauge adhesives - mounting methods – gauge sensitivities and gage factor – performance characteristics of wire and foil strain gauges – environmental effects. Analysis of strain gauge data – the three-element rectangular rosette – the delta rosette – correction for transverse sensitivity.
	UNIT -III Non - Destructive Testing Introduction - objectives of non destructive testing. Ultrasonic pulse velocity method - Rebound Hammer method (Concrete hammer) - Acoustic Emissionapplication to assessment of concrete quality	UNIT –III Non – Destructive Testing Introduction – objectives of non destructive testing. Ultrasonic pulse velocitymethod – Rebound Hammer method (Concrete hammer) – Acoustic Emission- application to assessment of concrete quality.

UNIT-IV Theory of Photo Elasticity Introduction — temporary double refraction — Index ellipsoid and stress ellipsoid — the stress optic law — effects of stressed model in a polariscope for various arrangements - fringe sharpening.

UNIT-IV

Distress Measurements and Control

Diagnosis of distress in structures Crack observation and measurements Corrosion of
Reinforcement in concrete - Half cell,

construction and use - Damage identification -

Controlled blasting for demolition - Techniques for residual stress measurements.

UNIT-V Two Dimensional Photo Elasticity Introduction—iso-chromatic fringe patterns — isoclinic fringe patterns — compensation techniques — calibration methods — separation methods — materials for photo-elasticity — properties of photo-elastic materials.

UNIT-V

Two Dimensional Photo Elasticity

Introduction—iso-chromatic fringe patterns — isoclinic fringe patterns — compensation techniques — calibration methods — separation methods — materials for photo- elasticity — properties of photo-elastic materials.

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Regulation	Pre-Revision	Post-Revision
Course	STRUCTURAL OPTMIZATION	STRUCTURAL OPTMIZATION
Title		
Course	172SE1E02	172SE1E02
Code ,	ur	
Syllabus	UNIT-I Introduction Need and scope for optimization — statements of optimization problems- Objective function and its surface design variables-constraints and constraint surface-Classification of optimization problems (various functions continuous, discontinuous and discrete) and function behavior (monotonic and unimodal).	UNIT-I Introduction Need and scope for optimization – statements of optimization problems- Objectivefunction and its surface design variables- constraints and constraint surface- Classification of optimization problems (various functions continuous, discontinuous and discrete) and function behavior (monotonic and unimodal). Design methodology- Civil engineering case study - Optimality criteria - Lagrange multiplier method - Kuhntucker Criteria.
	UNIT-II Classical Optimization Techniques Differential calculus method, multi variable optimization by method of constrained variation and Lagrange multipliers (generalized problem) Khun-Tucker conditions of optimality -Fully stressed design and optimality criterion based algorithmsintroduction, characteristics of fully stressed design th	UNIT-II ClassicalOptimization Techniques Differential calculus method, multi variable optimization by method of constrained variation and Lagrange multipliers (generalized problem) Khun-Tucker conditions of optimality -Fully stressed design and optimality criterion based

penalty	
function	
methods.	
UNIT-IV Linear	UNIT-IV
Programming	LinearProgramming
Definitions and	Definitions and theorems-Simplex method-
theorems-	DualityinLinear programming-Plasticanalysis
Simplex	andMinimum weightdesign andrigidframe.
method-Duality	
in Linear	
programmingPl	
astic analysis	
and Minimum	
weight design	
and rigid	
frame.	*
UNIT-V	UNIT-V
Introduction to	Non Traditional Methods
Quadratic	Genetic Algorithm - Terminology - Natural Law of
Programming	Evolutions - Genetic operators - steps for solution of problems
Geometric	- Simulated Annealing - Algorithm - Boltzman's equation -
programming-	ANT Colony optimization - Algorithm - Pheromone trail -
and dynamic	Travelling salesman problem - Introduction to TABU search -
programming-	sample problem – Artificial Neural Network - Application
Design of	characteristics.
beams and	
frames using	
dynamic	
programming	
technique.	

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Department of Civil Engineering

Regulation	Pre-Revision	Post-Revision
Course	ANALYSIS AND DESIGN OF TALL	ANALYSIS AND DESIGN OF TALL
Title	BUILDINGS	BUILDINGS
Course	172SE1E05	172SE1E05
Code		
	UNIT-I Design Philosophies and Materials Modern concepts — High Performance Concrete, Fibre Reinforced Concrete, Light weight concrete, Self Compacting Concrete	UNIT-I Design Philosophies and Materials Modern concepts – High Performance Concrete, Fibre Reinforced Concrete, Light weight concrete, Self Compacting Concrete.
Syllabus	UNIT-II Gravity Loading Dead load, Live load, Impact load, Construction load, Sequential loading. Wind Loading — Static and Dynamic Approach, Analytical method, Wind Tunnel- Experimental methods. Earthquake Loading — Equivalent lateral Load analysis, Response Spectrum Method, Combination of Loads	UNIT-II Gravity Loading Dead load, Live load, Impact load, Construction load, Sequential loading. Wind Loading – Static and Dynamic Approach, Analytical method, Wind Tunnel Experimental methods. Earthquake Loading – Equivalent lateral Load analysis, Response Spectrum Method, Combination of Loads
	UNIT –III Behavior of Structural Systems Factors affecting the growth, height and structural form, Behaviour of Braced frames, Rigid Frames, In-filled frames, Shear walls, Coupled Shear walls, Wall– Frames, Tubular, Outrigger braced, Hybrid systems.	UNIT –III Behavior of Structural Systems Factors affecting the growth, height and structural form, Behaviour of Braced frames, Rigid Frames, In-filled frames, Shear walls, Coupled Shear walls, Wall–Frames, Tubular, Outrigger braced, Hybrid

	systems.
UNIT-IV Analysis and Design Modelling for approximate analysis, Accurate analysis and reduction techniques, Analysis of structures as an integral unit, Analysis for member forces, drift and twist. Computerized 3D analysis. Design for differential movement, Creep and Shrinkage effects, Temperature Effects and Fire Resistance.	UNIT-IV Analysis Modellin approxim Accurate reduction Analysis an integrate for mem and twis 3D analy different Creep effects, Effects Resistand
UNIT-V Stability Analysis Overall buckling analysis of frames, wall–frames, Approximate methods, Second order effect of gravity loading, P–Delta Effects, Simultaneous first order and PDelta analysis, Translational instability,	UNIT-V Analysis Buildings Linear an Material Geometri

and Design

for analysis, mate analysis and techniques, s of structures as ral unit, Analysis nber forces, drift st. Computerized lysis. Design for movement, ial Shrinkage Temperature Fire and ce.

Torsional Instability, Out of plumb effects, Effect of stiffness of members and foundation rotation in stability of structures

and Behaviour of Tall

nd Non-linear behavior non-linearity ric non-linearity - Rigid and Elastic Supports - First Order Elastic Analysis - Second Order Elastic Analysis - First order Inelastic Analysis - Second order Inelastic Analysis - Behavior of Structural forms in Tall buildings - Rigid frame, Braced Frames, Shear Walls, Core walls, Tubular, Belt truss, Outrigger (Concepts only)

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Department of Civil Engineering

Regulation	Pre-Revision	Post-Revision
Course	PLASTIC ANALYSIS AND DESIGN	PLASTIC ANALYSIS AND DESIGN
Title		
Course	172SE1E06	172SE1E06
Code		VINITE V
	UNIT-I Introduction and Basic Hypothesis Concepts of stress and strain – relation of steel Moment curvature relation- basic difference between elastic and plastic analysis with examples- Yield condition, idealizations, collapse criteria- Virtual work in the elastic-plastic state-Evaluation of fully plastic moment and shape factors for the various practical sections	Introduction and Basic Hypothesis Concepts of stress and strain – relation of steel Moment curvature relation- basic difference between elastic and plastic analysis with examples- Yield condition, idealizations, collapse criteria- Virtual work in the elastic-plastic state- Evaluation of fully plastic moment and shape factors for the various practical sections.
Syllabus	UNIT-II Method of Limit Analysis Introduction to limit analysis of simply supported fixed beams and continuous beams, Effect of partial fixity and end, invariance of collapse loads, basic theorems of limit analysis, rectangular portal frames, gable frames, grids, superposition of mechanisms, drawing statistical bending moment diagrams for checks.	UNIT-II Method of Limit Analysis Introduction to limit analysis of simply supported fixed beams and continuous beams, Effect of partial fixity and end, invariance of collapse loads, basic theorems of limit analysis, rectangular portal frames, gable frames, grids, superposition of mechanisms, drawing statistical bending moment diagrams for checks.
	UNIT –III Limit Design Principles Basic principles, limit design theorems,	UNIT –III Limit Design Principles

application of limit design theorems, trial and error method, method of combining mechanisms, plastic moment distribution method, load replacement method, continuous beams and simple frames designs using above principles.

Basic principles, limit design theorems. application of limit design theorems, trial and error method. method combining mechanisms, plastic moment distribution method, load replacement method. continuous beams and simple frames designs using above principles.

UNIT-IV: Deflection in Plastic Beams and Frames' Load deflection relations for simply supported beams, deflection of simple pin based and fixed based portal frames, method of computing deflections.

UNIT-IV: Deflection in Plastic Beams and

Load deflection relations for simply supported beams, deflection of simple pin based and fixed based portal frames, method of computing deflections.

Frames

UNIT-V Minimum Weight Design Introduction to minimum Weight and linear Weight functions- Foulkes theorems and its geometrical analogue and absolute minimum weight design.

UNIT-V Detailing and Field Practices

Detailing for ductility - Measures of ductility - Flexural yielding in frames and walls - Flexural members in ductile frames - Columns and frame members subject to bending and axial load - Joints in ductile frames - shear walls - Fire resistance of structural members - Code requirements - Quality control of concrete

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Department of Electrical and Electronics Engineering

(Power Electronics and Drives)

Syllabus revision Index for 2017-2018

S. No	Name of the course	Percentage of syllabus change
1	Modern Control Theory	20
2	Optimization Techniques	20
3	Artificial Intelligence Techniques	20
4	HVDC Transmission	20

Dept: Of Electrical & Electronics Engineering Aditya Engineering College (A9)



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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Modern Control Theory	Modern Control Theory
Course Code	I5614	172PD1E01
Syllabus	UNIT -1: State Variable Analysis The concept of state — State Equations for Dynamic systems — State diagram - Linear Continuous time model for physical systems — Existence and Uniqueness of Solutions to Continuous — Time State Equations — Solutions — Linear Time Invariant Continuous — Time State Equations — State transition matrix and it's properties UNIT — 2: State Variable Techniques: General concept of Controllability — General concept of Observability Controllability tests for Continuous & Time Invariant systems — Observability tests for Continuous & Time Invariant systems — Controllability and Observability of state model in Jordan Canonical form — Controllability and Observability Canonical forms of State model — State feedback controller design through pole assignment. UNIT — 3: Non Linear Systems — I: Introduction — Non Linear Systems — I:	UNIT - I: State Variable Analysis: Introduction, concepts of state, state variables and state model, state-space representation for linear continuous-time systems and discrete-time systems. Time, domain solution of state equations: Solution of homogeneous state equations, state transition matrix, evaluation of matrix exponential (eAt), solution of non-homogeneous state equations UNIT - II: State Variable Techniques: General concept of Controllability - General concept of Observability Controllability tests for Continuous & Time Invariant systems - Observability tests for Continuous & Time Invariant systems - Controllability and Observability of state model in Jordan Canonical form - Controllability and Observability Canonical forms of State model - State feedback controller design through pole assignment. UNIT - III: Non Linear Systems - I: Introduction - Non Linear Systems -
	Types of Non – Linearities – Saturation – Dead – Zone – Backlash – Jump Phenomenon etc; - Singular Points – Introduction to Linearization of nonlinear systems, properties of	Types of Non - Linearities - Saturation — Dead - Zone - Backlash - Jump Phenomenon etc; - Singular Points - Introduction to Linearization of nonlinear systems, properties of Non
	Non Linear Systems - Describing	Linear Systems - Describing function -

function – describing function analysis of nonlinear systems- Stability analysis of Non – Linear systems through describing functions.

UNIT – 4: Non Linear Systems – II: Introduction to phase – plane analysis, Method of Isoclines for Constructing Trajectories, singular points, phase – plane analysis of nonlinear control systems.

UNIT - 5: Stability Analysis:

Stability in the sense of Lyapunov, Lyapunov's stability and Lyapunov's instability theorems — Stability Analysis of the Linear Continuous time invariant systems by Lyapunov second method —Generation of Lyapunov functions — Variable gradient method — Krasooviski's method.

describing function analysis of nonlinear systems- Stability analysis of Non - Linear systems through describing functions.

UNIT - IV: Non Linear Systems - II: Introduction to phase - plane analysis, Method of Isoclines for Constructing Trajectories, singular points, phase - plane analysis of nonlinear control systems.

UNIT -V: Stability Analysis:

Stability in the sense of Lyapunov, Lyapunov's stability and Lyapunov's instability theorems - Stability Analysis of the Linear Continuous time invariant systems by Lyapunov second method - Generation of Lyapunov functions - Variable gradient method - Krasooviski's method.

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Dept: Of Electrical & Electronics Engineering
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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	OPTIMIZATION TECHNIQUES	OPTIMIZATION TECHNIQUES
Course Code	I5616	172PD1E03
	UNIT — I: Introduction and Classical Optimization Techniques: Statement of an Optimization problem — design vector — design constraints — constraint surface — objective function — objective function surfaces — classification of Optimization problems. Single variable Optimization — multi variable Optimization without constraints — necessary and sufficient conditions for minimum/maximum — multivariable Optimization with equality constraints. Solution by method of Lagrange multipliers — multivariable Optimization with inequality constraints — Kuhn — Tucker conditions.	UNIT - I: Introduction and Classical Optimization Techniques: Statement of an Optimization problem - design vector - design constraints — constraint surface - objective function - objective function surfaces - classification of Optimization problems. Single variable Optimization - multi variable Optimization without constraints - necessary and sufficient conditions for minimum/maximum - multivariable Optimization with equality constraints. Solution by method of Lagrange multipliers
Syllabus	UNIT – II: Linear Programming Standard form of a linear programming problem – geometry of linear programming problems – definitions and theorems – solution of a system of linear simultaneous equations – pivotal reduction of a general system of equations – motivation to the simplex method – simplex algorithm - Duality in Linear Programming – Dual Simplex method. UNIT – III: Nonlinear	UNIT-II: Linear Programming: Standard form of a linear programming problem - geometry of linear programming problems - definitions and theorems - solution of a system of linear simultaneous equations - pivotal reduction of a general system of equations - motivation to the simplex method - simplex algorithm - Duality in Linear Programming - Dual Simplex method. UNIT - III: Nonlinear Programming.
	Programming: Unconstrained cases - One - dimensional minimization methods:	UNIT - III: Nonlinear Programming: Unconstrained cases - One - dimensional minimization methods: Classification, Fibonacci method and

Classification, Fibonacci method and Quadratic interpolation method - Univariate method, Powell's method and steepest descent method.

Constrained cases - Characteristics of a constrained problem, Classification, Basic approach of Penalty Function method; Basic approaches of Interior and Exterior penalty function methods. Introduction to convex Programming Problem.

Quadratic interpolation method Univariate method, Powell's method and steepest descent method. Quadratic programming with Kuhn-Tucker conditions and Wolfe's modified simplex method. Geometric programming.

UNIT - IV: Introduction to Evolutionary Methods:

Evolutionary programming methods - Introduction to Genetic Algorithms (GA)— Control parameters –Number of generation, population size, selection, reproduction, crossover and mutation – Operator selection criteria – Simple mapping of objective function to fitness function

constraints – Genetic algorithm
 steps – Stopping criteria –Simple examples.

UNIT - V: Introduction to Swarm Intelligence Systems:

Swarm intelligence programming methods - Basic Partial Swarm Optimization Method Characteristic features of PSO procedure of the global version -Parameters of PSO (Simple PSO algorithm Operators selection criteria - Fitness function constraints) - Comparison with other evolutionary techniques - Engineering applications of PSO.

UNIT- IV: Introduction to Evolutionary Methods:

Evolutionary programming methods - Introduction to Genetic Algorithms (GA)- Control parameters -Number of generation, population size, selection, reproduction, crossover and mutation - Operator selection criteria - Simple mapping of objective function to fitness function - constraints - Genetic algorithm steps - Stopping criteria - Simple examples.

UNIT- V : Introduction to Swarm Intelligence Systems:

Swarm intelligence programming methods Partial Basic Swarm Optimization - Method -Characteristic features of PSO procedure of the global version - Parameters of PSO (Simple PSO algorithm - Operators selection criteria - Fitness function constraints) Economic Load Dispatch and Unit commitment problem using dynamic programming, GA and particle swam optimization techniques

Course Coordinator

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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Artificial Intelligence Techniques	Artificial Intelligence Techniques
Course Code	I4308	172PD1E05
Syllabus	Networks Introduction, Humans and Computers, Biological Neural Networks, Historical development of neural network, Terminology and Topology, Biological and artificial neuron models, Basic learning laws. UNIT- 2: Feed Forward Neural Networks Introduction, Perceptron models: Discrete, continuous and multi- category, Training algorithms: Discrete and Continuous Perceptron Networks, Perceptron convergence theorem, Limitations and applications of the Perceptron model, Generalized delta learning rule, Feedforward recall and error back propagation training- Radial basis function algorithms-Hope field networks UNIT -3: Genetic algorithms &Modelling-Introduction-encoding- fitness function-reproduction operators-genetic operators-cross over and mutation-generational cycle- convergence of genetic algorithm	Networks History Of Neural Networks, Structure And Functions Of Biological And Artificial Neuron, Neural Network Architectures, Characteristics Of ANN, Basic Learning Laws and Methods. UNIT -II: Feed Forward Neural Networks: Introduction, Perceptron models: Discrete, continuous and multi-category, Training algorithms: Discrete and Continuous Perceptron Networks, Perceptron convergence theorem, Limitations and applications of the Perceptron model, Generalized delta learning rule, Feed forward recall and error back propagation training-Radial basis function algorithms-Hope field networks UNIT-III: Genetic algorithms and Modeling: introduction-encoding-fitness function- reproduction operators-genetic operators-cross over and mutation- generational cycle-convergence of genetic algorithm.
	UNIT – 4:Classical and Fuzzy Sets Introduction to classical sets - properties, operations and relations; Fuzzy sets, membership, Uncertainty, operations, properties, fuzzy relations,	UNIT- IV: Classical and Fuzzy Sets: Introduction to classical sets - properties, operations and relations; Fuzzy sets, membership, Uncertainty, operations, properties, fuzzy relations,

cardinalities, membership functions.
Fuzzy Logic System ComponentsFuzzification, Membership value
assignment, development of rule base
and decision making system,
defuzzification to crisp sets,
defuzzification methods.

UNIT-5: Application of AI Techniques: Design of PI controller for speed control of DC motor using neural networks and fuzzy logic-PWM Controllers -Selected harmonic elimination PWM- Space vector PWM using neural network.

cardinalities, membership functions. Fuzzy Logic System Components-Fuzzification, Membership value assignment, development of rule base and decision making system, de fuzzification to crisp sets. de fuzzification methods.

UNIT -V: Application of AI Techniques:

Design of PI controller for speed control of DC motor using neural networks and fuzzy logic-PWM Controllers -Selected harmonic elimination PWM- Space vector PWM using neural network.

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Department of Electrical and Electronics Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	HVDC Transmission	HVDC Transmission
Course	14309	172PD1E06
Code	UNIT-I: EHV AC Transmission:	UNIT-I: Introduction: DC Power
Syllabus	Limitation of EHV AC Transmission, Advantages of HVDC Technical economical reliability aspects. HVDC Transmission: General considerations, Power Handling Capabilities of HVDC Lines, Basic Conversion principles, static converter configuration. Types of HVDC links-Apparatus and its purpose. UNIT-II: Static Power Converters: 6-pulse bridge circuit and 12-pulse converters, converter station and Terminal equipment, commutation process, Rectifier and inverter operation, equivalent circuit for converter - special features of converter transformers. Comparison of the perform of diametrical connection with 6-pulse bridge circuit UNIT -III: Control of HVDC Converters and systems: Constant current, constant extinction angle and constant Ignition angle control. Individual phase control and equidistant firing angle control, DC power flow control. Factors responsible for generation of Harmonics voltage and current harmonics effect of variation of α and μ. Filters Harmonic elimination.	transmission technology—Comparison of AC and DC transmission—Application of DC transmission—Description of DC transmission system—Planning for HVDC transmission—Modern trends in HVDC technology—DC breakers—Operating problems— HVDC transmission based on VSC—Types and applications of MTDC systems. UNIT-II: Static Power Converters: 6-pulse bridge circuit and 12-pulse converters, converter station and Terminal equipment, commutation process, Rectifier and inverter operation, equivalent circuit for converter - special features of converter transformers. Comparison of the perform of diametrical connection with 6-pulse bridge circuit UNIT—III: Control of HVDC Converters and systems: Constant current, constant extinction angle and constant Ignition angle control. Individual phase control and equidistant firing angle control, DC power flow control. Factors responsible for generation of Harmonics voltage and current harmonics effect of variation of α and μ. Filters Harmonic elimination.

UNIT-IV: HV AC and DC systems: Interaction between HV AC and DC systems - Voltage interaction, Harmonic instability problems and DC power modulation. Development of DC circuit Breakers, Multi- terminal DC links and systems; series, parallel and series parallel systems, their operation and control.

UNIT-V: Transient over voltages in HV DC systems: Over voltages due to disturbances on DC side, over voltages due to DC and AC side line faults. Converter faults and protection in HVDC Systems: Converter faults, over current protection - valve group, and DC line protection, circuit breakers. Over voltage protection of converters, surge arresters.

UNIT-IV: HV AC and DC systems: Interaction between HV AC and DC systems - Voltage interaction, Harmonic instability problems and DC power modulation. Development of DC circuit Breakers, Multi- terminal DC links and systems; series, parallel and series parallel systems, their operation and control.

UNIT-V: Transient over voltages in HV DC systems: Over voltages due to disturbances on DC side, over voltages due to DC and AC side line faults. Converter faults and protection in HVDC Systems: Converter faults, over current protection - valve group, and DC line protection, circuit breakers. Over voltage protection of converters, surge arresters.

Course Coordinator

Head of the Department

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Department of Petroleum Technology

Syllabus revision Index for 2017-2018

S.No	Name of the course	Percentage of syllabus change
1	Optimization Of Oil And Gas Production	20
2	Deep Water Technologies	20

Signature of the course coordinator

Head of the Department Department of Petroleum Technology Aditya Engineering College (A) SURAMPALEM-5



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Department of Petroleum Technology

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	Optimization Of Oil And Gas Production	Optimization Of Oil And Gas Production
Course Code		172PE2E02
Syllabus	UNIT-V: Production Stimulation: Well problem identification- sick well analysis; Matrix acidizing-Design for sandstone & carbonate reservoirs, Hydraulic fracturing – formation fracture pressure, geometry, productivity of fractured wells, hydrofracture design, selection of fracturing fluid, propant, post frac evaluation.	UNIT-V: Field Development: Planning and Field Management-Short Term Optimization of Well Performance-Long Term Optimization of Well Performance-Productivity of Horizontal Wells.
3 40		
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Signature of the course coordinator

Head of the Department Department of Petroleum Technology Aditya Engineering College (A) SURAMPALEM-5



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Department of Petroleum Technology

. 1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course Title	Deep Water Technologies	Deep Water Technologies
Course Code		172PE2E05
Syllabus	UNIT-V: Hydrates: Physics and Phase Behavior; Hydrate Prevention; Hydrate Remediation; Hydrate Control Design Philosophies.	UNIT-V: Deep-water pipelines, Umbilical's & emerging Deep-water Technologies: Issues in Deep-water pipeline design, Rigid and Flexible flow lines, pipe-in-pipe, Deep-water Risers and their configurations, Pipeline installation methods, Umbilical's-functions, configurations and installation, Flow assurance strategies. Innovative floating production concepts, subsea processing, subsea separation and any innovations.

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Signature of the HOD

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Department of Petroleum Technology
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Department of Electronics and communication Engineering

Syllabus revision Index (E.S.)

2017-18

S.No	Name of the course	Percentage of syllabus change
1	Embedded System Design	20
2	Real Time Operating Systems	20
3	Soft Computing Techniques	50
4	Embedded systems laboratory	66

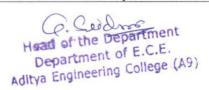
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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course	Embedded System Design	Embedded System Design
Title		,
Course	I5501	172EM1T02
Code		
syllabus	UNIT-I: Introduction	UNIT-I
	An Embedded System-Definition,	Introduction to Embedded Systems:
	Examples, Current Technologies,	Definition of Embedded System,
	Integration in system	Embedded Systems Vs General
	Design, Embedded system design	Computing Systems, History of
	flow, hardware design concepts,	Embedded Systems, Classification,
	software development,	Major Application Areas, Purpose of
	processor in an embedded system and	embedded systems, characteristics and
	other hardware units, introduction to	quality attributes of embedded systems.
www.	processor based embedded system	and the same and the same
	design concepts.	
	UNIT-II: Embedded Hardware	UNIT-II
	Embedded hardware building blocks,	Embedded Hardware:
	Embedded Processors – ISA	Embedded hardware building blocks,
	architecture models, Internal	Embedded Processors – ISA
	processor design, processor	architecture models, Internal processor
	performance, Board Memory – ROM,	design, processor performance, Board
	RAM, Auxiliary Memory, Memory	Memory – ROM, RAM, Auxiliary
	Management of External Memory,	Memory, Memory Management of
	Board Memory and performance.	External Memory, Board Memory and
	Embedded board Input / output –	performance. Embedded board Input /
	Serial versus Parallel I/O, interfacing	output – Serial versus Parallel I/O,
	the I/O components, I/O	interfacing the I/O components, I/O
	components and performance, Board	components and performance, Board
	buses – Bus arbitration and timing,	buses – Bus arbitration and timing,
	Integrating the Bus with other board	Integrating the Bus with other board
	components, Bus performance.	components, Bus performance.
	UNIT-III: Embedded Software	UNIT-III
	Device drivers, Device Drivers for	Embedded Software:
	interrupt-Handling, Memory device	Device drivers, Device Drivers for
	drivers, On-board bus	interrupt-Handling, Memory device
	device drivers, Board I/O drivers,	drivers, On-board bus device drivers,
	Explanation about above drivers with	Board I/O drivers, Explanation about



suitable examples. Embedded operating systems – Multitasking and process Management, Memory Management, I/O and file system management, OS standards example – POSIX, OS performance guidelines, Board support packages, Middleware and Application Software – Middle ware, Middleware examples, Application layer software examples.

UNIT-IV: Embedded System Design, Development, Implementation and Testing

Embedded system design and development lifecycle model, creating an embedded system architecture, introduction to embedded software development process and tools- Host and Target machines, linking and locating software, Getting embedded software into the target system, issues in Hardware-Software design and co-design. Implementing the design-The main software-utility tools CAD and the hardware, Translation tools, Debugging tools, testing on host machine, simulators, Laboratory tools, System Boot-Up.

UNIT-V: Embedded System Design-Case Studies

Case studies- Processor design approach of an embedded system – Power PC Processor based and Micro Blaze Processor based Embedded system design on Xilinx platform-NiosII Processor based Embedded system design on Altera platform-Respective Processor architectures should be taken into consideration while designing an Embedded System.

above drivers with suitable examples.
Embedded operating systems –
Multitasking and process Management,
Memory Management, I/O and file
system management, OS standards
example – POSIX, OS performance
guidelines, Board support packages,
Middleware and Application Software –
Middle ware, Middleware examples,
Application layer software examples.

UNIT-IV

Boot-Up.

Embedded System Design, Development, Implementation and Testing: Embedded system design and development lifecycle model, creating embedded system architecture, introduction to embedded software development process and tools- Host and Target machines, linking and locating software, getting embedded software into the target system, issues in Hardware-Software design and codesign. Implementing the design-The main software utility tool, CAD and the hardware, Translation tools, Debugging tools, testing on host machine, simulators, Laboratory tools, System

UNIT-V Embedded System Design-Case Studies:

Case studies- Processor design approach of an embedded system –Power PC Processor based and Micro Blaze Processor based Embedded system design on Xilinx platform-NiosII Processor based Embedded system design on Altera platform-Respective Processor architectures should be taken into consideration while designing an Embedded System

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Department of Electronics and communication Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	EMBEDDED REAL TIME	REAL TIME OPERATING SYSTEMS
Title	OPERATING SYSTEMS	
Course	15502	172EM1T03
Code		
syllabus	UNIT-I: Introduction	UNIT-I
	OS Services, Process Management,	Introduction:
	Timer Functions, Event Functions,	OS Services, Process Management,
	Memory Management, Device, File	Timer Functions, Event Functions,
	and IO Systems Management,	Memory Management, Device, File and
	Interrupt Routines in RTOS	IO Systems Management, Interrupt
	Environment and Handling of Interrupt	Routines in RTOS Environment and
	Source Calls, Real-Time Operating	Handling of Interrupt Source Calls,
114	Systems, Basic Design Using	Real-Time Operating Systems, Basic
	anRTOS, RTOS Task Scheduling	Design Using an RTOS, RTOS Task
	Models, Interrupt Latency and	Scheduling Models, Interrupt Latency
	Response of the Tasks as	and Response of the Tasks as
	Performance Metrics, OS Security	Performance Metrics, OS Security
	Issues.	Issues.
	UNIT-II: RTOS Programming	UNIT-II
	Basic Functions and Types of RTOS	Real Time Operating Systems:
	for Embedded Systems, RTOS	Brief History of OS, Defining RTOS,
	mCOS-II, RTOS Vx Works,	basic Functions and Types of RTOS for
	Programming concepts of above	Embedded Systems, The Scheduler,
	RTOS with relevant Examples,	Objects, Services, Characteristics of
	Programming concepts of	RTOS, Defining a Task, tasks States
	RTOS Windows CE, RTOS OSEK,	and Scheduling, Task Operations,
	RTOS Linux 2.6.x and RTOS RT	Structure, Synchronization,
	Linux.	Communication and Concurrency.
		Defining Semaphores, Operations and
		Use, Defining Message Queue, States,
	s - g	Content, Storage, Operations and Use,
	31.2	all the functions using RTOS MUCOS-
		II.
	UNIT-III: Program Modeling –	UNIT-III
	Case Studies	Program Modelling:

Case study of embedded system design and coding for an Automatic Chocolate Vending Machine (ACVM) Using Mucos RTOS, case study of digital camera hardware and software architecture, case study of coding for sending application layer byte streams on a TCP/IP Network Using RTOS Vx Works, Case Study of Embedded System for an Adaptive Cruise Control (ACC) System in Car, Case Study of Embedded System for a Smart Card, Case Study of Embedded System of Mobile Phone Software for Key Inputs.

Case Studies: Case study of embedded system design and coding for an Automatic Chocolate Vending Machine (ACVM) Using Mucos RTOS, case study of digital camera hardware and software architecture, case study of sending application layer byte streams on a TCP/IP Network, Case Study of Embedded System for an Adaptive Cruise Control (ACC) System in Car, Case Study of Embedded System for a Smart Card, Case Study of Embedded System of Mobile Phone.

UNIT-IV: Target Image Creation & Programming in Linux

Off-The-Shelf Operating Systems,
Operating System Software, Target
Image Creation for Window XP
Embedded, Porting RTOS on a Micro
Controller based Development
Board.Overview and programming
concepts of Unix/Linux Programming,
Shell Programming, System
Programming.

UNIT-IV

Target Image Creation & Programming in Linux:

Off-The-Shelf Operating Systems,
Operating System Software, Target
Image Creation for Window XP
Embedded, Porting RTOS on a Micro
Controller based Development
Board. Overview and programming
concepts of Unix/Linux Programming,
Shell Programming, System
Programming. Embedded Systems.

UNIT-V: Programming in RT Linux

Overview of RT Linux, Core RT Linux API, Program to display a message periodically, semaphore management, Mutex, Management, Case Study of Appliance Control by RT Linux System.

UNIT-V

Overview of RT Linux, Core RT Linux API, Program to display a message periodically, semaphore management,

Programming in RT Linux:

Mutex, Management, Case Study of Appliance Control by RT Linux System.

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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course	Soft Computing Techniques	Soft Computing Techniques
Title	A3 50000	
Course	I6807	172EM1E03
Code		
syllabus	UNIT –I:	UNIT-I
	Introduction:	Introduction:
	Approaches to intelligent control,	Approaches to intelligent control,
	Architecture for intelligent control,	Architecture for intelligent control,
	Symbolic reasoning system, Rule-	Symbolic reasoning system, Rule-based
	based systems, the AI approach,	systems, the AI approach, Knowledge
	Knowledge representation - Expert	representation – Expert systems.
_	systems.	
	UNIT –II:	UNIT-II
	Artificial Neural Networks:	Artificial Neural Networks:
9	Concept of Artificial Neural Networks	Concept of Artificial Neural Networks
	and its basic mathematical model,	and its basic mathematical model,
	McCulloch-Pitts neuron model, simple	McCulloch-Pitts neuron model,
	perceptron, Adaline and Madaline,	Learning Process: - error-correction
	Feed-forward Multilayer Perceptron,	learning, Hebbian learning, competitive
	Learning and Training the neural	learning, Boltzmann learning, the credit-
	network, Data Processing: Scaling,	assignment problem, supervised
	Fourier transformation, principal-	learning, and other learning techniques.
	component analysis and wavelet	Single Neuron/Perceptron networks: -
	transformations, Hopfield network,	training methodology, typical
	Self-organizing network and Recurrent network, Neural Network	application to linearly separable problems. Feed-forward Multilayer
	based controller.	Perceptron, Multilayer Perceptron: -
	based controller.	Back propagation algorithm, virtues and
		limitation of BP algorithm,
		modifications to back-propagation,
		Hopfield network, Self-organizing
	n	network and Recurrent network.
	UNIT –III:	UNIT-III
	Fuzzy Logic System:	Fuzzy Logic System:
	Introduction to crisp sets and fuzzy	Introduction to Fuzzy systems,
	sets, basic fuzzy set operation and	Membership function, basic fuzzy set
	approximate reasoning, Introduction	operation and approximate reasoning,

to fuzzy logic modeling and control, Fuzzification, inferencing and defuzzification, Fuzzy knowledge and rule bases, Fuzzy modeling and control schemes for nonlinear systems, Self-organizing fuzzy logic control, Fuzzy logic control for nonlinear time delay system.

Introduction to fuzzy logic modeling and control, Fuzzification, inferencing and de-fuzzification, Fuzzy modeling and control schemes for nonlinear systems, Self-organizing fuzzy logic control.

UNIT-IV:

Genetic Algorithm:

Basic concept of Genetic algorithm and detail algorithmic steps,
Adjustment of free parameters,
Solution of typical control problems using genetic algorithm, Concept on some other search techniques like
Tabu search and anD-colony search techniques for solving optimization problems.

UNIT-IV

Genetic Algorithm:

Basic concept of Genetic algorithm and detail algorithmic steps, Basic concepts, Search space, working principle.

Encoding: binary, Octal, Hexadecimal, permutation, Value and Tree. Decoding, fitness function, Selection: Roulette wheel, Boltzmann, Tournament, Rank and Steady-state. Elitism, Crossover: single-point, two-point, multi-point, uniform, matrix and crossover rate, Mutation: mutation, mutation rate. Ant colony optimization: Ant foraging behavior, combinatorial optimization, Routing in communication networks, traveling sales man problem.

UNIT-V:

Applications:

GA application to power system optimisation problem, Case studies: Identification and control of linear and nonlinear dynamic systems using MATLAB-Neural Network toolbox, Stability analysis of Neural-Network interconnection systems, Implementation of fuzzy logic controller using MATLAB fuzzy-logic toolbox, Stability analysis of fuzzy control systems.

UNIT-V

Applications:

GA: function optimization, adaptive system identification, and Application of ANN and Fuzzy systems to non-stationary time series prediction; pattern classification, control; communication engineering, system identification and pattern classification.

Signature of the course coordinator

Signature of the HOD
Head of the Department
Department of E.C.E.
Aditya Engineering College (A9)



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Department of Electronics and Communication Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	EMBEDDED SYSTEM DESIGN	EMBEDDED SYSTEMS
Title	LABORATORY	LABORATORY
Course	J5505	172EM1L01
Code		*
syllabus	Part-I: Experiments using ARM-926	List of Experiments:
	with PERFECT RTOS	1. LED Blinking.
	1. Register a new command in CLI.	2. ASCII to Decimal vice versa
	2. Create a new Task.	conversion.
	3. Interrupt handling.	3. Basic Arithmetic operations.
	4. Allocate resource using semaphores.	4. PWM (Motor application).
	5. Share resource using MUTEX.	5. Serial Communication (USART).
	6. Avoid deadlock using BANKER'S	ADC and DAC implementation.
	algorithm.	7. JTAG Debugger.
	7. Synchronize two identical threads	8. Seven segment display interfacing.
und.	using MONITOR.	9. LCD display interfacing.
	8. Reader's Writer's Problem for	10. 3x4 keyboard interfacing.
	concurrent Tasks.	11. Encryption and decryption of serial
	Part-II Experiments on ARM-	communication of characters (data) from
	CORTEX processor using any open	the system to PC RS232C COM port
	source RTOS.	12. CAN Controlled Traffic Lights
	(Coo-Cox-Software-Platform)	
	1. Implement the interfacing of display	
	with the ARM- CORTEX processor.	
	2. Interface ADC and DAC ports with	
	the Input and Output sensitive devices.	
	3. Simulate the temperature DATA	
	Logger with the SERIAL	
	communication with PC.	
	4. Implement the developer board as a	
	modem for data communication using	
	serial port	
	communication between two PC's.	

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Department of Electronics and communication Engineering

Syllabus revision Index (V.L.S.I.D.)

2017-18

S.No	Name of the course	Percentage of syllabus change
1	Soft Computing Techniques	50
2	Low Power VLSI Design	30
3	Back end VLSI Design Laboratory	60



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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course	Soft Computing Techniques	Soft Computing Techniques
Title		
Course	16807	172EM1E03
Code		
	UNIT –I:	UNIT-I:
1.0	Introduction:	Introduction:
	Approaches to intelligent control,	Approaches to intelligent control,
	Architecture for intelligent control,	Architecture for intelligent control,
	Symbolic reasoning	Symbolic reasoning system, Rule-based
	system, Rule-based systems, the AI	systems, the AI approach, Knowledge
	approach, Knowledge representation -	representation – Expert systems.
	Expert systems.	
	UNIT –II:	UNIT-II:
	Artificial Neural Networks:	Artificial Neural Networks:
	Concept of Artificial Neural Networks	Concept of Artificial Neural Networks
	and its basic mathematical model,	and its basic mathematical model,
	McCulloch-Pitts	McCulloch-Pitts neuron model,
	neuron model, simple perceptron,	Learning Process: - error-correction
_	Adaline and Madaline, Feed-forward	learning, Hebbian learning, competitive
	Multilayer Perceptron,	learning, Boltzmann learning, the credit-
	Learning and Training the neural	assignment problem, supervised
	network, Data Processing: Scaling,	learning, and other learning techniques.
	Fourier transformation,	Single Neuron/Perceptron networks: -
Syllabus	principal-component analysis and	training methodology, typical
	wavelet transformations, Hopfield	application to linearly separable
	network, Self-organizing	problems. Feed-forward Multilayer
	network and Recurrent network,	Perceptron, Multilayer Perceptron: -
	Neural Network based controller.	Back propagation algorithm, virtues and limitation of BP algorithm,
	18	modifications to back-propagation,
		Hopfield network, Self-organizing
		network and Recurrent network.
	UNIT –III:	UNIT-III:
	Fuzzy Logic System:	Fuzzy Logic System:
	Introduction to crisp sets and fuzzy	Introduction to Fuzzy systems,
	sets, basic fuzzy set operation and	Membership function, basic fuzzy set
	approximate reasoning,	operation and approximate reasoning,
	approximate reasoning,	operation and approximate reasoning,

Introduction to fuzzy logic modeling and control, Fuzzification, inferencing and defuzzification,

Fuzzy knowledge and rule bases,
Fuzzy modeling and control schemes for nonlinear systems,
Self-organizing fuzzy logic control,
Fuzzy logic control for nonlinear timedelay system.

Introduction to fuzzy logic modeling and control, Fuzzification, inferencing and de-fuzzification, Fuzzy modeling and control schemes for nonlinear systems, Self-organizing fuzzy logic control.

UNIT-IV:

Genetic Algorithm:

Basic concept of Genetic algorithm and detail algorithmic steps,
Adjustment of free parameters,
Solution of typical control problems using genetic algorithm, Concept on some other search techniques like Tabu search and anD-colony search techniques for solving optimization problems.

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UNIT-V:

Applications:

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UNIT-V:

Applications:

GA: function optimization, adaptive system identification, and Application of ANN and Fuzzy systems to non-stationary time series prediction; pattern classification; control; communication engineering; system identification and pattern classification.

Signature of the course coordinator

Signature of the HOD

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Department of Electronics and communication Engineering

Regulation	Pre-Revision	Post-Revision
Course	Low Power VLSI Design	Low Power VLSI Design
Title		
Course	J6806	172VD2T06
Code		
	UNIT-I: Fundamentals of Low	UNIT-I
	Power VLSI Design	Fundamentals of Low Power VLSI
	Need for Low Power Circuit Design,	Design:
	Sources of Power Dissipation –	Basics of MOS circuits: MOS Transistor
	Switching Power	structure and device modeling, MOS
	Dissipation, Short Circuit Power	Inverters, MOS, Combinational Circuits
	Dissipation, Leakage Power	 Different Logic Families. Need for
	Dissipation, Glitching Power	Low Power Circuit Design. Sources of
	Dissipation, Short Channel Effects -	Power dissipation: Dynamic Power
.57	Drain Induced Barrier Lowering and	Dissipation, Short Circuit Power,
	Punch Through,	Switching Power, Glitch Power, and
	Surface Scattering, Velocity	Static Power Dissipation. Short Channel
1.5	Saturation, Impact Ionization, Hot	Effects –Drain Induced Barrier
9	Electron Effect.	Lowering and Punch Through, Surface
	, .	Scattering, Velocity Saturation, Impact
		Ionization, Hot Electron Effect.
	UNIT-II: Low-Power Design	UNIT-II
	Approaches	Low-Power Design Approaches:
COMMAN SATURE OF	Low-Power Design through Voltage	Low-Voltage Low-Power Design
Syllabus	Scaling – VTCMOS circuits,	Techniques – Trends of Technology and
	MTCMOS circuits,	Power Supply Voltage, Low-Voltage
	Architectural Level Approach –	Low-Power Logic Styles.
	Pipelining and Parallel Processing	Low-Power Design through Voltage
	Approaches.	Scaling:
	Switched Capacitance Minimization	VTCMOS circuits, MTCMOS circuits,
	Approaches	Architectural Level Approach –
	System Level Measures, Circuit Level	Pipelining and Parallel Processing
	Measures, Mask level Measures.	Approaches. Switched Capacitance
		Minimization Approaches: System
		Level Measures, Circuit Level Measures and Masklevel Measures.
	HINET HE I V. L. I D	
	UNIT-III: Low-Voltage Low-Power	UNIT-III
	Adders	Low-Voltage Low-Power Adders

Introduction, Standard Adder Cells, CMOS Adder's Architectures – Ripple Carry Adders, Carry Look-Ahead Adders, Carry Select Adders, Carry Save Adders, Low-Voltage Low-Power Design Techniques –Trends of Technology and Power Supply Voltage, Low-Voltage Low-Power Logic Styles.

&Multipliers:

Introduction, Standard Adder Cells, CMOS Adder's Architectures – Ripple Carry Adders, Carry Look-Ahead Adders, Carry Select Adders, Carry Save Adders, Introduction, Overview of Multiplication, different types of Multiplier Architectures, Baugh-Wooley Multiplier, Booth Multiplier.

UNIT-IV: Low-Voltage Low-Power Multipliers

Introduction, Overview of Multiplication, Types of Multiplier Architectures, Braun Multiplier, Baugh-Wooley Multiplier, Booth Multiplier, Introduction to Wallace Tree Multiplier.

UNIT-IV

Low-Voltage Low-Power Memories:
Basics of ROM, Low-Power ROM
Technology, Future Trend and
Development of ROMs, Basics of
SRAM, Memory Cell, Pre-charge and
Equalization Circuit, Low-Power
SRAM Technologies, Basics of DRAM,
Self-Refresh Circuit, Future Trend and
development of DRAM.

UNIT-V: Low-Voltage Low-Power Memories

Basics of ROM, Low-Power ROM
Technology, Future Trend and
Development of ROMs,
Basics of SRAM, Memory Cell,
Precharge and Equalization Circuit,
Low-Power SRAM
Technologies, Basics of DRAM, SelfRefresh Circuit, Future Trend and
Development of
DRAM.

UNIT V

Energy recovery and low power latches and Flip Flops:
Energy Recovery Circuit Design:

Design with Partially Reversible Logic-Need for Low Power Latches and Flip Flops- Evolution of Latches and Flip Flops-Quality Measures for Latches and Flip Flops.

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Signature of the HOD

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Department of Electronics and communication Engineering

1.1.2. Table-Prior/Post revision of syllabus

Regulation	Pre-Revision	Post-Revision
Course	Back end VLSI Design Laboratory	Back end VLSI Design Laboratory
Title	Duck tha Thor Design Eastfatory	Each that i Bol Bookin Bacolition
Course	J5704	172VD2L02
Code		
	PART-A: VLSI Lab (Back-end	List of Experiments:
	Environment)	1. Digital circuit simulation:
	The students are required to design	a. Design and verify the functional
	and implement the Layout of the	response of Shift Register by describing it
	following	in
	experiments of any FIVE using	Verilog HDL.
	CMOS 130nm Technology with	b. Design and verify the functional
	appropriate	response of Adders by describing it in
	Industrial standard software	Verilog HDL.
	List of Experiments:	2. IIR/FIR design using Matlab
	9. Inverter Characteristics.	Simulink
	10. Full Adder.	Note:-The students are required to design
	11. RS-Latch, D-Latch and Clock	schematics and implement the layout of
	Divider.	the following experiments using CMOS
	12. Synchronous Counter and	130nm Technology with Mentor Graphics
	Asynchronous Counter.	Tool. 3. Schematics and its functional
	13. Static RAM Cell.	
	14. Dynamic RAM Cell.	response verification for the following Circuits
Syllabus	15. ROM	a. CMOS Inverter b. Universal gates c.
	16. Digital-to-Analog-Converter.	Full Adder. d. D-latch
	17. Analog-to-Digital Converter.	e. Ring Counter f. Differential Amplifier
	PART-B: Mixed Signal Simulation	g. SRAM
	The students are required to	4. Layout extraction for the following
	perform the following experimental	Circuits
	concepts with	a. CMOS Inverter b. Universal gates c.
1	suitable complexity of mixed-signal	Full Adder. d. D-latch
	application based circuits of any	e. Ring Counter f. Differential Amplifier
	FOUR (circuits	g. SRAM
	consisting of both analog and digital	5. Performing DRC for the following
	parts) using necessary appropriate	Circuits
	Industrial	a . CMOS Inverter b . Universal gates c .
	standard software	Full Adder. d. D-latch
	List of experimental Concepts:	e. Ring Counter f. Differential Amplifier
	za. or experimental conceptor	1

Analog circuit simulation.
Digital circuit simulation.
Mixed signal simulation.
Layout Extraction.
Parasitic values estimation from layout.
Layout Vs Schematic.
Net List Extraction.
Design Rule Checks

- g. SRAM
- 6. Performing LVS / Net list extraction for the following Circuits
- a. CMOS Inverter b. Universal gates c.Full Adder. d. D-latch
- e. Ring Counter f. Differential Amplifier
- g. SRAM
- 7. PEX estimation for the following logic circuits
- a. CMOS Inverter b. Universal gates c.Full Adder. d. D-latch
- e. Ring Counter f. Differential Amplifier

g. SRAM

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Department of Mechanical Engineering

M.Tech-Thermal Engineering

Syllabus revision Index (2017-18)

S. No	Name of the course	Percentage of syllabus change
1	- Refrigeration& Cryogenics	. 20
2	Solar Energy Technology	20

Program Coordinator

Head of the Department

Head of the Department
Department of Mechanical Engineering
Aditya Engineering College (A)
SURAMPALEM-533 437



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Department of Mechanical Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Refrigeration& Cryogenics	Refrigeration& Cryogenics
Course Code	I2106	. 171TE1E02
	UNIT-I:	UNIT-I:
	Vapour Compression	Vapour Compression Refrigeration
	Refrigeration Systems:	Systems:
	Analysis of vapour compression	Analysis of vapour compression
	refrigeration cycle. Compound	refrigeration cycle. Compound
	Vapour Compression System:	Vapour Compression System:
	Removing of flash gas inter cooling	Removing of flash gas inter cooling
	compound compression ultra water	compound compression ultra water
	inter cooler - liquid flash cooler	inter cooler - liquid flash cooler flash
	flash inlet cooler, multiple	inlet cooler, multiple evaporator and
	evaporator and compression	compression systems, one
	systems, one compressor system	compressor system individual
	individual compressors compound	compressors compound compression
20	compression cascade systems.	cascade systems.
	UNIT-II:	UNIT-II:
	Absorption Refrigeration System	Absorption Refrigeration System
	With Multiple Evaporators:	With Multiple Evaporators:
	Three fluid absorption systems-the	Three fluid absorption systems-the
CIL	Lithium Bromide water absorption	Lithium Bromide water absorption
Syllabus	system, Steam jet water vapour	system, Steam jet water vapour
	systems thermoelectric refrigeration	systems thermoelectric refrigeration
	systems vortex refrigeration system	systems vortex refrigeration system
	pulse tube refrigeration. Desirable properties of refrigerants	pulse tube refrigeration. Desirable properties of refrigerants designation
	properties of refrigerants designation of refrigerants	of refrigerants inorganic, halo carbon
	inorganic, halo carbon refrigerants	refrigerants inorganic halo carbon
	inorganic halo carbon reactions-	reactions- secondary refrigerants
	secondary refrigerants reaction of	reaction of refrigerants with moisture
	refrigerants with moisture and oil	and oil properties of mixtures of
	properties of mixtures of	refrigerants ozone depletion potential
2.3	refrigerants ozone depletion	and global warming potential of CFC
	potential and global warming	refrigerants substitutes for CFC
	potential of CFC refrigerants	refrigerants.
	substitutes for CFC refrigerants.	

UNIT -III:

Cryogenics:

Introduction necessity of low temperature - Multistage Refrigeration system -Cascade system. Manufacture of dry ice-Joule Thompson coefficient, Liquefaction of air, Lined system-Analysis- Dual pressure cycle analysis-Liquefaction of Hydrogen and Helium problems.

UNIT-IV:

Application of Lower Temperatures:

Effects on the properties of metalsstrength-Thermal properties-super conductivity-super fluidity. Applications like expansion fitting cryobiology-cryosurgery - space research computers underground power lines.

UNIT-V:

Temperature Low Insulation: Reflective insulation-Evacuated powders-Rigid foams-Super insulation, cooling by adiabatic demagnetization - Gas separation and cryogenic systems separation of gasesRectifying columns-Air separatingsingle and double columns Air separation plant. Storage and handling of cryogenic liquids - Dewar's and other types of containers.

UNIT -III:

Cryogenics:

Introduction necessity of low temperature - Multistage Refrigeration system -Cascade system. Manufacture of dry ice-Joule Thompson coefficient, Liquefaction of air, Lined system-Analysis- Dual pressure cycle analysis-Liquefaction of Hydrogen and Helium problems.

UNIT-IV:

Cryogenic Instrumentation:

Cryogenic Temperature Sensors, Cryogenic Liquid mass measurement in Storage Tanks and smaller Propeller Tanks, Thermo Couples, Semi Conductor Thermometry, Cryogenic Instrumentation for pressure and flow measurement.

UNIT-V:

Application of Lower Temperatures: Effects on the properties of metals-strength-Thermal properties-super conductivity-super fluidity

Low Temperature Insulation: Reflective insulation-Evacuated powders-Rigid foams-Super insulation, cooling by adiabatic demagnetization - Gas separation and cryogenic systems separation of gases.

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Course Coordinator

Head of the Department

Head of the Department
Mechanical Engineering
Aditya Engineering College
Surampalem



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Department of Mechanical Engineering

Regulation	Pre-Revision	Post-Revision
Course Title	Solar Energy Technology	Solar Energy Technology
Course Code	I12110	172TE2E06
Syllabus	UNIT-I: Introduction: Solar energy option, specialty and potential, Sun, Earth Solar radiation, beam and diffuse, measurement, estimation of average solar radiation on horizontal and tilted surfaces, problems, applications. Capturing solar radiation physical principles of collection, types, liquid flat plate collectors, construction details, and performance analysis, concentrating collection, flat plate collectors with plane reflectors, cylindrical parabolic collectors, orientation and tracking, performance analysis. UNIT-II: Design of Solar Water Heating System and Layout: Power generation, solar central receiver system, Heliostats and Receiver, Heat transport system, solar distributed receiver system, Power cycles, working fluids and prime movers, concentration ratio. Unit-III: Thermal Energy Storage: Introduction, Need for, Methods of sensible heat storage using solids and liquids, packed bed storage, Latent heat storage — working principle, construction, application and limitations. Other solar devices — stills, air heaters, dryers, Solar Ponds & Solar Refrigeration, active and passive heating systems.	UNIT-I: Introduction: Solar energy option, specialty and potential, Sun, Earth Solar radiation, beam and diffuse, measurement, estimation of average solar radiation on horizontal and tilted surfaces, problems, applications. Capturing solar radiation physical principles of collection, types, liquid flat plate collectors, construction details, and performance analysis, concentrating collection, flat plate collectors with plane reflectors, cylindrical parabolic collectors, orientation and tracking, performance analysis. UNIT-II: Design of Solar Water Heating System and Layout: Power generation, solar central receiver system, Heliostats and Receiver, Heat transport system, solar distributed receiver system, Power cycles, working fluids and prime movers, concentration ratio. Unit-III: Thermal Energy Storage: Introduction, Need for, Methods of sensible heat storage using solids and liquids, packed bed storage, Latent heat storage — working principle, construction, application and limitations. Other solar devices — stills, air heaters, dryers, Solar Ponds & Solar Refrigeration, active and passive heating systems.

Unit-IV:

Direct Energy Conversion:

Solid-state principles, semiconductors, solar cells, performance, modular construction, applications. conversion efficiencies calculations.

Unit-IV:

Direct Energy Conversion:

Solid-state principles, semiconductors, solar cells, performance, modular construction, applications. conversion efficiencies calculations.

Economics: Principles of Economic Analysis – Discounted cash flow – Solar system – life cycle costs – cost benefit analysis.

UNIT-V:

Economics:

Principles of Economic Analysis – Discounted cash flow – Solar system – life cycle costs – cost benefit analysis and optimization – cost based analysis of water heating and photo voltaic applications.

Unit-V

Applications of Solar energy:

Solar Water Heating, Solar Furnaces, Solar Pumping, Solar Electric Power Generation, Solar Thermal Power Production, Solar Buildings. Use of flat plate and solar collectors in thermal power plants.

Course Coordinator

Head of the Department

Head of the Department
Mechanical Engineering
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Department of Computer Science and Engineering

Syllabus revision Index 2017-2018

S.No	Name of the course	Percentage of syllabus change
1	Computer Organization and Architecture	40%
2	Computer Networks	50%

Program Coordinator

Head of the Department

Head of the Department
Department of CSE

DITYA ENGINEERING COLLEGE (A9



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Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Organization and	Computer Organization and
Title	Architecture	Architecture
Course	15802	172CO1T03
Code		
	UNIT-I:	UNIT-I:
	Number Systems And Computer	Number Systems and Basic
	Arithmetic Signed And Unsigned	Operational Concepts
	Numbers, Addition and Subtraction,	Number Systems And Computer
	Multiplication, Division, Floating	Arithmetic Signed And Unsigned
	Point Representation Logical	Numbers Addition and Subtraction,
	Operation, Gray Code, BCD Code,	Multiplication, Division, Floating Point
	Error Detecting Codes. Boolean	Representation.
	Algebra, Simplification of Boolean	Basic Operational Concept, Bus
	Expressions- Maps.	Structures. Register Transfer Language,
		Register Transfer, Bus and Memory
		Transfers, Micro operations, Types of
		Micro operations.
	UNIT-II:	UNIT-II:
	Combinational and Sequential Circuits	Instructions and Register
	Decoders, Encoders, Multiplexers,	Organization
	Half and Full Adders, Shift	Instruction codes, Computer Registers,
	Registers, Flip-Flops, Binary	Computer Instructions, Timing and
	Counters, Memory Unit.	Control, Instruction Cycle, Instruction
Syllabus		Types.
		General Register Organization, Stack
		Organization, Instruction formats,
		Addressing modes, RISC and CISC
		Computers.
	UNIT-III:	UNIT-III:
	Memory Organisation Memory	Memory Organization Memory
	Hierarchy, Main Memory, Auxiliary	Hierarchy
	Memory, Associative Memory, Cache	
	Memory, Virtual Memory Concept.	Associative Memory, Cache Memory,
	VINITE VIV.	Virtual Memory Concepts.
	UNIT-IV:	UNIT-IV:
	ALU Design Addition and	ALU Design Addition and Subtraction
	Subtraction, Sign and Unsigned	Sign and Unsigned Numbers,

Numbers, Multiplication and Division	Multiplication and Division Algorithms,
Algorithms, BCD Adders.	BCD Adders.
UNIT-V:	UNIT-V:
Input -Output Organisation Peripheral	Input – Output Organization
	Peripheral Devices, Input-Output
Asynchronous data transfer, Modes of	Interface, Asynchronous data transfer,
Transfer, Priority Interrupts, DMA,	Modes of Transfer, Priority Interrupts,
	DMA, Input Output Processor, Serial
Communication.	Communication.

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ADITYA ENGINEERING COLLEGE

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Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

Department of Computer Science and Engineering

Regulation	Pre-Revision	Post-Revision
Course	Computer Networks	Computer Networks
Title		
Course	J5801	172CO1T05
Code		
	UNIT-I:	UNIT-I:
	Introduction: Network Topologies	Introduction to Network Topologies
	WAN, LAN, MAN. Reference models- The OSI Reference Modelthe	and Reference models
	TCP/IP Reference Model - A	Network Topologies WAN, LAN, MAN. Reference models- The OSI
	Comparison of the OSI and TCP/IP	Reference Model-the TCP/IP Reference
	Reference Models	Model - A Comparison of the OSI and
	Reference Woders	TCP/IP Reference Models, Examples of
		Networks: Novell Networks, Arpanet,
		Internet
	UNIT-II:	UNIT-II:
	Physical Layer - Fourier Analysis -	Physical Layer
	Bandwidth Limited Signals - The	Introduction, Guided Transmission
	Maximum Data Rate of a Channel -	Media, Multiplexing: frequency division
	Guided Transmission Media, Digital	multiplexing, wave length division
	Modulation and Multiplexing:	multiplexing, synchronous time division
	Frequency Division Multiplexing,	multiplexing, statistical time division
	Time Division Multiplexing, Code	multiplexing, introduction to switching:
	Division Multiplexing Data Link	Circuit Switched Networks, Datagram
Syllabus	Layer Design Issues, Error Detection	Networks, Virtual Circuit Networks.,
	and Correction, Elementary Data Link	Code Division Multiplexing.
	Protocols, Sliding Window Protocols	
	UNIT-III:	UNIT-III:
	The Data Link Layer - Services	The Data Link Layer
	Provided to the Network Layer –	Design Issues ,Services Provided to the
	Framing – Error Control – Flow Control, Error Detection and	Network Layer – Framing – Error
	Correction – Error-Correcting Codes –	Control – Flow Control, Error Detection and Correction – Error-Correcting
	Error Detecting Codes, Elementary	Codes – Error Detecting Codes, CRC,
	Data Link Protocols- A Utopian	Hamming code, Elementary Data Link
	Simplex Protocol-A Simplex Stop and	Layer protocols: simplex protocol,
	Wait Protocol for an Error free	Simplex stop and wait, Simplex
	channel-A Simplex Stop and Wait	protocol for Noisy Channel. Sliding
		F Jon and A

Protocol for a Noisy Channel, Sliding Window Protocols-A One Bit Sliding Window Protocol-A Protocol Using Go-Back-N- A Protocol Using Selective Repeat window protocol: One bit, Go back N, Selective repeat-Stop and wait protocol, HDLC, point to point protocol (PPP).

UNIT-IV:

The Medium Access Control Sublayer-The Channel Allocation Problem-Static Channel Allocation-Assumptions for Dynamic Channel Allocation, Multiple Access Sense Protocols-Aloha-Carrier Multiple Multiple Access Protocols-Collision-Free Protocols-Limited Contention Protocols-Wireless LAN Protocols, Ethernet-Classic Ethernet Physical Layer-Classic Ethernet MAC Sublayer Protocol-Ethernet Performance-Fast Ethernet Gigabit Ethernet-10-Gigabit Ethernet-Retrospective on Ethernet, Wireless Lans-The 802.11 Architecture and Protocol Stack-The 802.11 Physical Layer-The802.11 MAC Sublayer Protocol-The 805.11 Frame Structure-Services

UNIT-IV:

Random Access

ALOHA, MAC addresses, Carrier sense multiple access (CSMA), CSMA with Collision Detection, CSMA with Collision Avoidance, Controlled Access: Reservation, Polling, Token Passing, Channelization: frequency division multiple access(FDMA), time division multiple access(TDMA), code division multiple access(CDMA). Network Layer: Virtual circuit and Datagram subnets-Routing algorithm shortest path routing, Flooding, Hierarchical routing, Broad cast, Multicast, distance vector routing.

UNIT-V:

Design Issues-The Network Layer Design Issues - Store and Forward Packet Switching-Services Provided to the Transport layer- Implementation of Connectionless Service-Implementation of Connection Oriented Service-Comparison Virtual Circuit and Datagram Networks, Routing Algorithms-The Optimality principle-Shortest path Algorithm, Congestion Control Algorithms-Approaches to Congestion Control-Traffic Aware Routing-Admission Control-Traffic Throttling-Load Shedding.

UNIT-V:

Layer Data link layer, physical layer,
Manchester encoding, Standard
Ethernet: MAC sub layer, physical
layer, Fast Ethernet: MAC sub layer,
physical layer, IEEE-802.11:
Architecture, MAC sub layer,
addressing mechanism, frame structure.
Application layer (WWW and HTTP):
ARCHITECTURE: Client (Browser),
Security, DNS, SNMP, Email, The
wireless web: WAP—The Wireless
Application Protocol

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Department of M.Tech (Software Engineering)

Regulation	Pre-Revision	Post-Revision
Course Title	Big Data Analytics	Big Data Analytics
Course Code	162SO1T04	172SO1T04
Syllabus	UNIT-I: Dictionaries and Hashing: Sets, Dictionaries, Hash Tables, Open Hashing, Closed Hashing (Rehashing Methods), Different Hash Functions(Division Method, Multiplication Method, Mid-Square Method, Folding Method), Secure Hash Functions, Collision Resolution Techniques - Open Addressing and Closed Addressing, Dynamic Hashing. UNIT-II: Introduction to Non linear Data Structures: Trees: Introduction, Types of Trees, Creating a Binary tree, Traversing a Binary Tree, Applications of Binary Tree. Priority Queues: Introduction, Binary Heaps, Basic Heap Operations, Applications of Priority Queues.	UNIT-I: External Sorting: Introduction, K-way Merge Sort, Buffer Handling for parallel Operation, Run Generation, Optimal Merging of Runs, Huffman Tree. Hashing: Introduction to Static Hashing, Hash Tables, Hash Functions, Different Hash Functions, Collision Resolution Techniques, Dynamic Hashing UNIT-II: Priority Queues (Heaps): Introduction, Binary Heaps-Model and Simple Implementation, Basic Heap Operations, Other Heap Operations, Applications of Priority Queues, Binomial Heaps (or Queues), Binomial Heap Structure and Implementation, Binomial Queue Operations.
	Trees: Binary Search Trees, Operations on Binary Search Trees, Self- balancing Binary Search Trees, AVL Trees- Operations on AVL Trees Multi-way Search Trees: B- Trees, B+ Trees.	Trees: Self-balancing Binary Search Tree, AVL Trees, Rotations-LL, RR, LR and RL, Searching, Insertion, Deletion operations on AVL Trees, Red-Black Tree, Properties and Representation of Red-Black Trees, Insertion and deletion operations on Red-Black Trees, Applications of Red-Black Trees.
	UNIT-IV: Graphs: Graph Terminology, Representations of Graphs, Graph Traversal Algorithms,	UNIT-IV: Multiway Search Trees: M- Way Search Trees Definition and Properties, B-Tree Definition and

Minimum Cost Spanning Tree-Kruskal's and Prim's algorithms, Shortest Path Algorithm Dijkstr's Algorithm, Applications of Graphs.

Properties, Searching, Insertion and Deletion operations on B-Trees, B+Tree, Insertion and Deletion operations on B+Trees. Digital Search Structures: Introduction to Digital Search Tree, Operations on Digital Search Trees- Insertion, Searching, and Deletion.

UNIT-V: Pattern matching algorithms: The Boyer –Moore algorithm, The Knuth-Morris- Pratt algorithm Tries: Definition, Digital Search Tree-Operations on Digital Search Tree, Binary trie and Patricia.

UNIT-V: Digital Search Structures: Binary Tries, Compressed Binary Trie, Patricia, Searching Patricia, inserting into Patricia, delete a node from Patricia, Multiway Tries- Definition, Searching a Trie, Compressed Tries, Compressed Tries with Digit Numbers-Searching, Insertion, Deletion. String Processing: String Operations, Brute-Force Pattern The Matching, **BoyerMoore** Algorithm, The Knuth-Morris-Pratt Algorithm, The Longest Common Subsequence Problem (LCS).

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Department of M.Tech (Software Engineering)

Regulation	Pre-Revision	Post-Revision
Course Title	Cloud Computing	Cloud Computing
Course Code	162CO2E08	172CO2E08
Syllabus	UNIT-I: Basic Structure Of Computers: Functional unit, Basic Operational concepts, Bus structures, System Software, Performance, The history of computer development. UNIT-II: Machine Instruction and Programs: Instruction and Instruction Sequencing: Register Transfer Notation, Assembly Language Notation, Basic	UNIT-I: Basic Structure of Computers: Computer Types, Functional Units, Basic Operational Concepts, Bus structures, Software, Performance, Historical Perspective. Machine Instruction and Programs: Instructions and Instruction Sequencing, Addressing Modes, Basic Input/output Operations, Stacks and Queues, Additional Instructions.Case Study: ARM, Motorola and Intel Instruction sets. UNIT-II: Arithmetic: Addition and Subtraction of Signed Numbers, Signed- Operand Multiplication, Floating-Point Numbers and Operations — IEEE
	Instruction Types, Addressing Modes, Basic Input/output Operations, The role of Stacks and Queues in computer programming equation. Component of Instructions: Logic Instructions, shift and Rotate Instructions	Standard for Floating-Point Numbers, Arithmetic Operations on Floating-Point Numbers. Basic Processing Unit: Some Fundamental Concepts, Execution of a Complete Instruction, Multiple-Bus Organization, Hardwired Control, Micro programd Control -Microinstructions, Micro program Sequencing, Wide Branch Addressing, Microinstructionswith Next -Address
	UNIT-III: Type of Instructions: Arithmetic and Logic Instructions, Branch Instructions, Addressing Modes, Input/output Operations	UNIT-III: The Memory System: Some Basic Concepts, Read-Only Memories - ROM, PROM, EPROM, EEPROM, Flash Memory, Speed, Size and Cost, Cache Memories - Mapping Functions, Replacement Algorithms, Performance considerations – Interleaving, Hit Rate and Miss Penalty, Virtual Memories, Memory Management Requirements, Secondary Storage
	UNIT-IV: INPUT/OUTPUT ORGANIZATION: Accessing I/O Devices,	UNIT-IV: Input/Output Organization: Accessing I/O Devices, Interrupts -

Interrupts: Interrupt Hardware, Enabling and Disabling Interrupts, Handling Multiple Devices, Direct Memory Access, Buses: Synchronous Bus, Asynchronous Bus, Interface Circuits, Standard 1/0 Interface: Peripheral Component Interconnect (PCI) Bus, Universal Serial Bus (USB)

Interrupt Hardware, Enabling and Disabling Interrupts, Handling Multiple Devices, modes of transfer –Programd I/O, Interrupt initiated I/O & Direct Memory Access, Buses - Synchronous Bus, Asynchronous Bus, Interface Circuits, Standard I/O Interfaces - Peripheral Component Interconnect (PCI) Bus, Universal Serial Bus (USB).

UNIT-V: The MEMORY SYSTEMS: Basic memory circuits, Memory System Consideration, ReadOnly Memory: ROM, PROM, EPROM, EEPROM, Flash Memory, Cache Memories: Mapping Functions, INTERLEAVING Secondary Storage: Magnetic Hard Disks, Optical Disks,

UNIT-V: Pipelining: Basic Concepts,
Data Hazards, Instruction Hazards,
Influence on Instruction Sets, Datapath
and Control Considerations, Superscalar
Operation.

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