



# ADITYA ENGINEERING COLLEGE

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

Program Name : M.Tech. in Petroleum Engineering

## Syllabus Revision for the Academic Year 2021-2022

S.No	Semester	Course Code	Course Name	% of content revised for the existing year
1	I	192PE1T01	Offshore Drilling.	0
2	I	192PE1T02	Fundamentals of Petroleum Geology and Reservoir Engineering. (NON-PE stream)	0
3	I	192PE1T03	Reservoir Stimulation (PE stream)	0
4	I	192PE1T04	Petroleum Well Drilling and Production Engineering. (NON-PE stream)	0
5	I	192PE1E01	Advanced Numerical Methods and Applied	0
6	I	192PE1E02	CBM and Shale Gas Engineering	0
7	I	192PE1E03	Transportation of Oil and Gas	0
8	I	192PE1E04	Advanced Well Logging Techniques and Well Testing Analysis	20
9	I	192HS1T01	Research Methodology and IPR	0
10	I	192PE1L01	Advanced Numerical Methods and	0
11	I	192PE1L02	Drilling Simulation Laboratory	0
12	II	192PE2T05	Artificial Lift Techniques	0
13	II	192PE2T06	Reservoir Modeling and Simulation	0
14	II	192PE2E05	Advanced EOR Techniques	0
15	II	192PE2E06	Advanced Well Completions	20
16	II	192PE2E07	Flow Assurance	0
17	II	192PE2E08	Advanced Horizontal Well Technology	0
18	II	192PE2L03	Reservoir Simulation Laboratory	0
19	II	192PE2L04	Flow Assurance Laboratory	0
20	II	192PE2P01	Mini Project with Seminar	0
21	I & II	192MC1A01/192MC2A01	English for Research Paper Writing	0
22	I & II	192MC1A02/192MC2A02	Disaster Management	0
23	I & II	192MC1A03/192MC2A03	Sanskrit for Technical Knowledge	0
24	I & II	192MC1A04/192MC2A04	Value Education	0
25	I & II	192MC1A05/192MC2A05	Constitution of India	0

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S.No	Semester	Course Code	Course Name	% of content revised for the existing year
26	I & II	192MC1A06/192MC2A06	Pedagogy Studies	0
27	I & II	192MC1A07/192MC2A07	Stress Management by Yoga	0
28	I & II	192MC1A08/192MC2A08	Personality Development through Life Enlightenment Skills	0
29	I & II	192MC1A09/192MC2A09	Soft Skills	0
30	III	192ST3O01	Repair & Rehabilitation of Structures	0
31	III	192ST3O02	Green Building Systems	0
32	III	192ST3O03	Basic Concrete Technology	0
33	III	192ST3O04	Basic Foundation Engineering	0
34	III	192PD3O01	Renewable Energy Technologies	0
35	III	192PD3O02	Hybrid Electric Vehicles	0
36	III	192PD3O03	Energy Audit and conservation Management	0
37	III	192PD3O04	Neural Networks and Fuzzy Logic	0
38	III	192PD3O05	Industrial Safety	0
39	III	192PD3O06	Composite Materials	0
40	III	192TE3O01	Energy Systems	0
41	III	192TE3O02	Fuels and Combustion	0
42	III	192TE3O03	Green Engineering Technology	0
43	III	192TE3O04	IC Engines	0
44	III	192TE3O05	Automotive Technology	0
45	III	192ES3O01	Embedded System Design	0
46	III	192ES3O02	Digital System Design	0
47	III	192ES3O03	Programming Languages for	0
48	III	192ES3O04	Sensors & Actuators	0
49	III	192VD3O01	Physical Design Automation	0
50	III	192VD3O02	VLSI Technology	0
51	III	192VD3O03	Nano-electronics	0
52	III	192CS3O01	Python Programming (CSE)	0
53	III	192CS3O02	Principles of Cyber Security	0
54	III	192CS3O03	Internet of Things	0
55	III	192CS3O04	Machine Learning	0
56	III	192CS3O05	Artificial Intelligence	0

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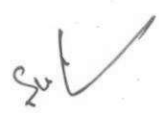
S.No	Semester	Course Code	Course Name	% of content revised for the existing year
57	III	192CS3O06	Deep Learning	0
58	III	192PE3O01	Introduction to Petroleum Engineering	0
59	III	192PE3O02	Process Intensification	0
60	III	192PE3O03	Fundamentals of Liquefied Natural Gas	0
61	III	192PE3O04	Subsea Engineering	0
62	III	192PE3O05	Geology	0
63	III	192PE3O06	HSE in Petroleum Industry	0
64	III	192PE3P02	Dissertation-I/ Industrial Project	0
65	IV	192PE4P03	Dissertation-II	0

Total number of courses in the academic year 2021-2022	= 65
Number of courses having revision in syllabus content $\geq 20\%$ in the academic year 2021-2022	= 2
Percentage of syllabus revision carried out in the academic year 2021-2022 = $(2/65)*100$	= 3.07%

  
Program Coordinator

  
Head of the Department

Head of the Department  
Department of Petroleum Technology  
Aditya Engineering College (A)  
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## Department of Petroleum Technology

Date: 02-05-2022

### Minutes of the VIII meeting of BOS scheduled on 29-04-2022

The VIII meeting of the BOS (Board of Studies) of PT was held on 29-04-2022 at 10:00 AM in the Ajivika Conference Hall, Bill Gates Bhavan, AEC. Dr. R. Giri Prasad, chairperson presided over the meeting.

#### **Agenda 8.1: Welcome address by Chairperson.**

Dr. R. Giri Prasad, BOS chairperson invited the distinguished members of BOS to the VIII BOS Meeting.

#### **Agenda 8.2: Ratification of minutes of the previous Board of Studies meeting**

The BOS members have ratified the points discussed in the previous Board of Studies meeting held on 29/04/2022.

#### **Agenda 8.3: Discussion on proposed AR 20 B. Tech Program – V, VI, VII & VIII Semesters Syllabus and ratification of the same**

The BOS members approved the AR 20 B. Tech (PT) V, VI, VII & VIII Semesters syllabus after making the following changes in the proposed syllabi.

- Suggested to keep "IPC first order and second order systems
- Suggested to add "IPC text latest edition
- Suggested to replace "FIT, special drill fluids in drilling and well completions
- Suggested to replace well logging, mud logging and formation evaluation.
- Suggested to add liquefaction in unit 4 natural gas engineering.
- Suggested to replace "u-5 in reservoir engineering with immiscible displacement topics.
- Suggested to introduce reference text books for IPC labs.
- Suggested to add "developments of an LNG project in unit 1 in FLNG Elective subject, some new text books also referred.
- Suggested to add HSE FE unit 3 modifications and some reference text books suggested.
- Suggested to replace pipe line engineering as basic pipeline engineering.

  
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**Agenda 8.4: Discussion on proposed syllabus for courses in V to VII Semester under AR20 Honors and Minor Degree and ratification of the same.**

The BOS members approved the V, VI, VII & VIII Semester under AR20 Honors and Minor Degree syllabus after making the following changes in the proposed syllabi.

- Suggested to keep “fundamentals of petroleum industry as basic concepts in seismic methods for hydrocarbon exploration.
- Suggested to keep some topics in applied RE & M subject in unit 5 and some latest text are referred.
- Suggested to keep natural gas engineering as mass transfer operations
- Suggested to keep underground coal gasification in tight gas engineering.

**Agenda 8.5: Discussion on the value-added courses to be offered for students and ratification of the same.**

The BOS members approved the list of value-added courses offered to students.

**Agenda 8.6: Discussion on the new courses offered for B. Tech (PT) programs and ratification of the same.**

The BOS members have ratified the new courses offered in B. Tech (PT) programs. The percentage of new courses introduced in the academic year 2021-2022 for B. Tech (PT) is 6.81 %. The list of new courses is enclosed as Annexure-I.

**Agenda 8.7: Discussion on the percentage of syllabus revision done in the B. Tech (PT) program and ratification of the same.**


The BOS members have ratified the B. Tech (PT) and M. Tech (PE) syllabus revision percentage. The percentage of courses revised in this academic year 2021-2022 for B. Tech (PT) is 38.93% and M. Tech (PE) is 3.07 %. The list of courses revised is enclosed as Annexure-II

**Agenda 8.8: Discussion on the courses having focus on employability/entrepreneurship/skill development in B. Tech (PT) and M. Tech (PE) programs and ratification of the same.**

The BOS members have ratified the courses having focus on employability/entrepreneurship/skill development in B. Tech (PT) and M. Tech (PE) programs.

**Agenda 8.9: Discussion on all the programs in which Choice Based Credit System (CBCS)/Elective course system is being implemented and ratification of the same.**

The BOS members have ratified the B. Tech (PT) and M. Tech (PE) Choice Based Credit System (CBCS)/Elective course system.

  
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**Agenda 8.10: Analysis of Feedback on curriculum from stake holders**

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-III.

**Agenda 8.11: Analysis of results of the odd semesters of the academic year 2021-22**

The BOS chairperson presented odd semester pass percentage for the A.Y.2021-2022. The BOS members noted the same and appreciated the faculty.

**Agenda 8.12: Analysis of student's feedback in the odd semesters of the academic year 2021-22**

The BOS Chairperson expressed that the student feedback & action taken report process was initiated at end of each semester.

**Agenda 8.13: Any other item with the approval of Chairman**

NIL

**Agenda 8.14: Scheduling of next Board of Studies meeting.**

The next BOS meeting is tentatively scheduled in the month of September, 2022.

**Agenda 8.15: 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**  
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## Department of Petroleum Technology

### Annexure-I

#### List of New Courses in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1.	B. Tech (PT)	III	201SC3L10	Industry Exploration Project
2.	B. Tech (PT)	V	191PR5P02	Socially Relevant Project
3.	B. Tech (PT)	V	191PT5E01	Natural Gas Engineering and Processing
4.	B. Tech (PT)	V	191PT5O02	Fundamentals of Petroleum Industry
5.	B. Tech (PT)	V	191PT6E05	Operational and Maintenance of Pipelines
6.	B. Tech (PT)	V	191PT7E09	Unconventional Hydrocarbon Resources
7.	B. Tech (PT)	V	191PT5O01	Process Intensification in Petroleum Industry
8.	B. Tech (PT)	VI	191PT6E07	Advanced Separation Techniques
9.	B. Tech (PT)	VI	191PT6O03	Unconventional Hydrocarbon Resources
10.	B. Tech (PT)	VI	191PT6O04	Asset Management

BOS Chairperson

Head of the Department  
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## Department Of Petroleum Technology

### Annexure-II

#### List of Courses Revised in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1.	B. Tech (PT)	V	191PT5T09	Well Logging and Mud Logging
2.	B. Tech (PT)	VI	191PT6E04	Fundamentals of Liquefied Natural gas
3.	M. Tech (PE)	I	192PE1E04	Advanced Well Logging Techniques and Well Testing Analysis
4.	M. Tech (PE)	II	192PE2E06	Advanced Well Completions

  
BOS Chairperson

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## Department of Petroleum Technology Annexure III

### Action Taken Report on Stakeholders Feedback in the Academic Year 2021-2022

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1.	8.4	Suggested to keep transferable and necessary skills with rising demand in all industries.	As suggested and discussion made with members pipeline project management course will be implemented.
2.	8.8	Capability to acquire and apply fundamental principles of engineering is needed.	As per suggestions Internship is made mandatory and thereby the students should take the industry training.
3.	8.8	Suggested to involve advanced topics, Engineers are looking nowadays in the curriculum.	According to the suggestions and discussions made it will be added to the curriculum.
4.	8.8	Capability to acquire and apply fundamental principles of engineering is needed.	As per suggestions Internship is made mandatory and thereby the students should take the industry training.
5.	8.12	Advancements in industries and job opportunities in the core must be known.	As per suggestion, seminars and workshops will be conducted.
6.	8.3	Due to tremendous response in the companies of software courses in the petroleum industry, it is better to get the basic knowledge on application	As suggested, Various modelling software's like CMG, MATLAB, ASPEN HYSIS etc will be included in the curriculum.
7.	8.4	Perception of the need for more topics to be included, as well as the general need for a few topics to be modified.	As per suggestions some topics introduced and removed in core subjects
8.	8.3	Every students to understand the basic principles of engineering and the introduction of biological concepts so that they can effectively interact to concern for providing solutions to the problems related to bio systems.	As suggested, biology for engineers will be introduced into the curriculum.
9.	8.3	It is better student have knowledge on the computer science related subjects during their graduation.	As per the suggestions and discussion made with the experts, BOS and Professionals, Honours and Minor degree programs will be introduced based on the students choice.
10.	8.8	Due to the tremendous growth in the IT industry it is better to get known to programming related subjects.	As per suggestions, SOC (Skill Oriented Course) will be introduced to the curriculum.

  
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11.	8.3	A clear understanding on the material must be known to perform research.	As per suggestion received, introduction about exploration project will be introduced.
12.	8.12	It is better that students have knowledge on the cutting edge technologies.	According to the suggestion received, it will be introduced to the curriculum based on the discussions made.
13.	8.3	Better to perform real time applications for better employment.	As per suggestions it will be planned to discuss with the m .tech coordinator and project guides for the implementation of experimental and analytical projects.
14.	8.8	Due to the tremendous growth in the IT industry it is better to get known to programming related subjects.	As per suggestions, and discussions SOC (Skill Oriented Course) implemented
15.	8.4	Capability to acquire and apply fundamental principles of engineering is needed.	As per suggestions Internship is made mandatory and thereby the students should take the industry training for project.
16.	8.4	Due to tremendous response in the companies of software courses in the petroleum industry , it is better to get the basic knowledge on application.	As suggested, Various modelling software's like MATLAB already included in the curriculum.
17.	8.3	For better placement in the core companies problem solving skills and performance need to be enhanced.	As per feedback, AICTE and college will implement to get the access of PARAKH -SLAP to practise online exams for job.

  
BOS Chairperson

Head of the Department  
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## Department of Agricultural Engineering

Date: 03-05-2022

### Minutes of the VIII meeting of BOS scheduled on 25-04-2022 and 30-04-2022

The VIII BOS meeting of Agricultural Engineering was virtually held in Microsoft Teams on 25-04-2022 and 30-04-2022 at 9.30 AM. Dr. N.V. Gowtham Deekshithulu, Chairperson presided over the meeting.

#### Agenda 8.1: Welcome address by chairperson BOS.

Dr. N.V. Gowtham Deekshithulu, Chairperson of BOS, invited all the distinguished members of BOS to the VIII BOS meeting.

#### Agenda 8.2: Ratification of minutes of VII BOS meeting.

The BOS members accepted and ratified the minutes of VII BOS meeting unanimously.

#### Agenda 8.3.: Discussion on proposed AR20 B. Tech Program – V, VI, VII & VIII semesters syllabus and ratification of the same.


The BOS members approved the AR20 B.Tech. (Ag.E) V, VI, VII and VIII semesters syllabus after making the following changes in the proposed syllabi.

1. Suggested to change CO's, add topics on creep, epicyclic gear train, speed of governors, coefficient of fluctuation of speed and energy, design of flywheel and add textbook in Theory of Machines.
2. Suggested to add minor changes in COB's, CO's and add direct and indirect methods of stream flow measurements, Simple storm and complex storm and Unit hydrograph derivation in Watershed Hydrology.
3. Suggested to add Modified Penman Monteith Method in Evapotranspiration estimation methods, List of irrigation water control & diversion structures instead of irrigation structures and add new text books and remove topics of Lacey's and Kennedy's theory in design of irrigation canal capacity in Irrigation and Drainage Engineering.
4. Suggested to improve COB's, CO's and to add head loss calculation of the sprinkler and drip irrigation system topics in Sprinkler and Micro Irrigation Systems.

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5. Suggested to add mean areal rainfall measurement topic instead of rainfall measurement and shift exercise on unit hydrograph lab from augmented experiments to main list of experiments in Watershed Hydrology Lab.
6. Suggested to change CO5 in Irrigation and Drainage Engineering Lab.
7. Suggested a minor change in CO's and add term tillage implements instead of tillage implement, levelers instead of levelled, combine harvester instead of combine, types of threshers and losses and troubleshooting in Farm Machinery and Equipment.
8. Suggested to add splash erosion, roughness coefficient instead of roughness and add a book from reference books to textbooks in Soil and Water Conservation Engineering.
9. Suggested to add methods of drying topic in Post Harvest Engineering of Cereals, Pulses and Oil Seeds.
10. Suggested to add wider and narrow tools topic in Mechanics of Tillage and Traction.
11. Suggested to add a minor change in COB and add planning of warabandhi irrigation system, Water control and diversion structures topics in Management of Canal Irrigation System.
12. Suggested to change COB1 and CO1 and add CIP principals- techniques, FSSAI standards and regulations for dairy products topics in Dairy and Food Engineering.
13. Suggested to add Short-term harvesting techniques - contour bunds, semicircular hoop, trapezoidal bunds, graded bunds, rock catchment and ground catchment, Design of Gabion structures, drop inlet spillway- design criteria topics in Water Harvesting and Soil Conservation Structures.
14. Suggested to change Wastewater treatment and management course title as Agricultural Structures and Protected Cultivation.
15. Suggested to add combine harvester instead of combine and add experiment on land levelling using the laser guided land leveler in augmented experiments list in Farm Machinery and Equipment Lab.
16. Suggested to add visit to watershed project for studying erosion control and water conservation measures in list of experiments and move Study of rainfall simulator for erosion assessment to list of augmented experiments and add Field Manual on Watershed Management in Soil and Water Conversation Engineering Lab.

  
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