

# Course Structure

B.Tech in Petroleum Engineering (2015-19)

First Year (Semester I and II)

Year: 1<sup>st</sup>

Semester: I

## Group A

Course Code	Course Title	L	T	P	Credit
JA1010	Engineering Mathematics-I	3	1	0	3.5
OA1210	Engineering Physics	3	1	2	4.5
LA1210	Essentials of Mechanical Engineering	3	1	2	4.5
HA1210	Professional Communication-I	3	0	1	3.5
DA1210	Computer Fundamental & C Programming	3	0	2	4
BA1010	Environmental Science	2	0	0	2
LA1220	Engineering Graphics	1	0	2	2
HA1310	Soft Skills Development	0	0	2	1
	<b>Total</b>				<b>25</b>

*Evaluation Scheme for Soft Skills Course will be as under:*

Course	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
Soft Skills	10	30	30	30	100

Year: 1<sup>st</sup>

Semester: I

## Group B

Course Code	Course Title	L	T	P	Credit
JA1010	Engineering Mathematics-I	3	1	0	3.5
BA1210	Engineering Chemistry	3	1	2	4.5
EA1210	Introduction to Electrical Engineering	3	1	2	4.5
FA1210	Introduction to Electronics & Communication	3	1	2	4.5
HA1210	Professional Communication-I	3	1	0	3.5
DA1210	Computer Fundamental & C Programming	3	0	2	4
LA1110	Workshop Practice	0	0	2	1
	<b>Total</b>				<b>25.5</b>

**Year: 1<sup>st</sup>****Semester: II****Group A**

Course Code	Course Title	L	T	P	Credit
JA2010	Engineering Mathematics-II	3	1	0	3.5
BA1210	Engineering Chemistry	3	1	2	4.5
EA1210	Introduction to Electrical Engineering	3	1	2	4.5
FA1210	Introduction to Electronics & Communication	3	1	2	4.5
HA2210	Professional Communication-II	3	0	1	3.5
DA2211	Computer Programming in C++	3	0	2	4
LA1110	Workshop Practice	0	0	2	1
	<b>Total</b>				<b>25.5</b>

**Year: 1<sup>st</sup>****Semester: II****Group B**

Course Code	Course Title	L	T	P	Credit
JA2010	Engineering Mathematics-II	3	1	0	3.5
OA1210	Engineering Physics	3	1	2	4.5
LA1210	Essentials of Mechanical Engineering	3	1	2	4.5
HA2210	Professional Communication-II	3	0	1	3.5
DA2211	Computer Programming in C++	3	0	2	4
BA1010	Environmental Science	2	0	0	2
LA1220	Engineering Graphics	1	0	2	2
HA1310	Soft Skills Development	0	0	2	1
	<b>Total</b>				<b>25</b>

*Evaluation Scheme for Soft Skills Course will be as under:*

Course	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
Soft Skills	10	30	30	30	100

**Year: 2<sup>nd</sup>****Semester: III**

Course Code	Course Title	L	T	P	Credit
MA3210	Applied Geology - I	3	1	2	4.5
MA3010	Introduction to Petroleum Operation	3	1	0	3.5
JA3010	Engineering Mathematics-III	3	1	0	3.5
OA3010	Engineering Physics-II	3	1	0	3.5
LA3090	Essentials of Mechanical Engineering-II	3	1	0	3.5
CA3230	Basic Surveying	3	1	2	4.5
	<b>Total</b>				<b>23</b>

**Year: 2<sup>nd</sup>****Semester: IV**

Course Code	Course Title	L	T	P	Credit
MA4210	Fluid Mechanics & Machinery	3	1	2	4.5
MA4220	Heat Transfer Process	3	1	2	4.5
MA4230	Drilling Fluid and Cements	3	1	2	4.5
MA4010	Applied Geology -II	3	1	0	3.5
MA4020	Chemical Thermodynamics	3	1	0	3.5
MA4030	Oil & Gas Well Drilling Technology and Well Completion	3	1	0	3.5
MA4310	Value Addition Training *	0	0	2	1
MA4410	Industrial Tour	0	0	2	1
	<b>Total</b>				<b>26</b>

\* List of Courses for Value Addition

**Year: 3<sup>rd</sup>****Semester: V**

Course Code	Course Title	L	T	P	Credit
MA5210	Elements of Reservoir Engineering	3	1	2	4.5
MA5220	Unit Operation	3	1	2	4.5
MA5010	Petroleum Production Operation-I	3	1	0	3.5
MA5020	Petroleum Exploration Methods	3	1	0	3.5
GC5010	Engineering Economics	2	0	0	2
JA5210	Computer Based Numerical Techniques	3	1	2	4.5
MA5310	Aptitude Building -I	0	0	2	2
	<b>Total</b>				<b>24.5</b>

**Year: 3<sup>rd</sup>****Semester: VI**

Course Code	Course Title	L	T	P	Credit
MA6010	Petroleum Production Operation-II	3	1	0	3.5
MA6020	Formation Evaluation	3	1	0	3.5
MA6030	Applied Petroleum Reservoir Engineering	3	1	0	3.5
MA6040	Petroleum Refining and Petrochemicals	3	1	0	3.5
MA6050	Oil and Gas Well Testing	3	1	0	3.5
HA5010	Principles of Management	2	0	0	2
MA6310	Aptitude Building -II	0	0	2	1
MA6110	Petroleum Product Testing Lab.	0	0	2	1
MA6120	Project Phase - I	0	0	4	1
	<b>Total</b>				<b>22.5</b>

**Year: 4<sup>th</sup>****Semester: VII**

Course Code	Course Title	L	T	P	Credit
MA7010	Petroleum Engineering System Design	3	1	0	3.5
MA7020	Reservoir Simulation	3	1	0	3.5
MA7030	Offshore Drilling and Production Practices	3	1	0	3.5
MA7040	Well Stimulation	3	1	0	3.5
	Departmental Elective-I	3	1	0	3.5
MA7110	Project Phase - II	0	0	4	2
MA7510	Industrial Training Presentation *	0	0	2	4
	<b>Total</b>				<b>23.5</b>

\* During Summer Vacation after VI<sup>th</sup> semester students are compulsorily required to attend Industrial Training of 6-8 weeks which will be evaluated in VII Semester under Industrial Training Presentation (MA7510).

#### List of Departmental Elective-I for VII Semester:

MA7610	Non-Conventional Petroleum Resources
MA7620	Material Technology
MA7630	Polymer Technology
MA7640	Directional Drilling

**Year: 4<sup>th</sup>****Semester: VIII**

Course Code	Course Title	L	T	P	Credit
	Open Elective	3	0	0	3
MA8010	Natural Gas Engineering	3	1	0	3.5
MA8020	Oil & Gas Transportation System	3	1	0	3.5
MA8030	Enhanced Oil Recovery	3	1	0	3.5
	Departmental Elective – II	3	1	0	3.5
MA8110	Project Phase -III	0	0	8	4
	<b>Total</b>				<b>21</b>

#### List of Departmental Elective-II for VIII Semester:

MA8610	Health, Safety and Environmental Management in Petroleum Operations
MA8620	Oil and Gas Marketing and Resource Management
MA8630	Fuel Technology
MA8640	Carbon Capture and Sequestration

### List of Open Electives (To be conducted in VIII Semester)

Sl. No.	Branch	Subject Code	Name of Elective subjects
1	Physics	OA8710 OA8720	1. Nano Scale Science and Technology 2. Photonics Technology
2	EE	EA8710 EA8720	1. Non-Conventional Energy Resources 2. Instrumentation and Process control
3	ME	LA8710 LA8720	1. Entrepreneurship development 2. Quality Management
4	Civil	CA8710 CA8720	1. Environment and Ecology 2. GIS
5	CSE	DA8710 DA8720	1. Business Intelligence 2. Artificial Intelligence
6	IT	IA8710 IA8720	1. Multi-Media Technology 2. IT In Business
7	ECE	FA8710 FA8720	1. Consumer Electronics 2. Laser System & Application
8	Humanities	HA8710 HA8720	1. Industrial Psychology 2. Human Values and Ethics
9	MBA	GA8710 GA8720 GA8730 GA8740	1. Organizational Behavior 2. HRD 3. Digital Marketing 4. Financial Modeling with Spread sheet

### Summary of the Credits

Year	Semester	Credit	Year Credit
First Year	I	25/25.5	50.5
	II	25/25.5	
Second Year	III	23	49
	IV	26	
Third Year	V	24.5	47
	VI	22.5	
Fourth Year	VII	23.5	44.5
	VIII	21	
Total			191

**A. Evaluation Scheme for the following Courses will be as under:**

Course	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
<b>Aptitude Building-1</b>	10	30	30	30	100
<b>Aptitude Building-2</b>	10	30	30	30	100
Value Addition Training	10	30	30	30	100
Soft Skills	10	30	30	30	100

**B. Evaluation Scheme for Project will be as under:**

Course	Evaluation Scheme (%)				
	Synopsis	Presentation	Report	Viva-Voce	Total
Project Phase-I	10	15	25	50	100
Project Phase-II					
Project Phase-III					

**Project Phase-I & II** will be evaluated by the Committee comprising of the following:

1. Head of the Department – Chairman
2. Teacher In-charge – Member
3. One nominee appointed by Director (Academic) – Member

**Project Phase-III** will be evaluated by the Committee comprising of the following:

1. Head of the Department – Chairman
2. Teacher In-charge – Member
3. One nominee appointed by Director (Academic) – Member
4. One nominee appointed by Vice Chancellor – Member

**C. Evaluation Scheme for Industrial Training will be as under:**

Course	Evaluation Scheme (%)			
	Training Report	Presentation	Monitoring	Total
Industrial Training	25	50	25	100

**\* Subject to modification as may be announced**