



Petroleum Engineering –B.S.



DANESHPAJOOHAN PISHRO HIGHER EDUCATION INSTITUTE

- **COURSE CHART**
- **SYLLABUS**
- **SEMESTER CHART**

Petroleum Engineering Undergraduate Course Chart

General Courses

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite	Simultaneous
61-11-004	Islamic Thoughts-I	2	2	0	-----	-----
61-11-011	Islamic Thoughts-II	2	2	0	Islamic Thoughts-I	-----
61-11-003	Rite of Life (Applied Ethics)	2	2	0	-----	-----
61-11-012	Islamic Revolution of Iran	2	2	0	-----	-----
61-11-014	Analytical History of Islam	2	2	0	-----	-----
61-15-001	Persian Language	3	3	0	-----	-----
61-15-002	English Language	3	3	0	-----	-----
61-15-005	Physical Education	1	0.5	0.5	-----	-----
61-15-011	Exercise-I	1	0	1	Physical Education	-----
61-15-007	Family and Population Knowledge	2	2	0	-----	-----
61-11-008	Introduction to Constitution	2	2	0	-----	-----
61-11-013	The Holy Quran Exegesis	2	2	0	-----	-----
Total Credits		22	Note: Only one course between 'Islamic Revolution of Iran' and 'Introduction to Constitution' shall be taken.			

Science Courses

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite	
	Mathematics-I	3	3	0	-----	
	Mathematics-II	3	3	0	Mathematics-I	
	Differential Equations	3	3	0	Mathematics-II	
	Engineering Mathematics	3	3	0	Differential Equations	
	Physics-I	3	3	0	-----	
	Physics I-Lab	1	0	1	Physics-I	
	Physics-II	3	3	0	Physics-I	
	Physics-II Lab	1	0	1	Physics-II	
	Chemistry-I	3	3	0	-----	
	Chemistry-II	2	2	0	Chemistry-I	
	Chemistry Lab	1	0	1	Chemistry-I	
	Organic Chemistry	3	3	0	Chemistry-II	
	Organic Chemistry Lab	1	0	1	Organic Chemistry	
	Physical Chemistry	2	2	0	Organic Chemistry	
	Computer Application in Petroleum Engineering	3	3	0	Mathematics-II	
	Geology	2	2	0	-----	
Total Credits		20				

Petroleum Engineering Courses

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Statics and Strength of Materials	3	3	0	Mathematics-II
	Structural Geology	3	3	0	Geology
	Introduction to Petroleum Engineering	2	2	0	
	Energy and Materials	3	3	0	(after the third semester)
	Petroleum Geology	3	3	0	Structural Geology
	Thermodynamics-I	3	3	0	Energy and Materials
	Fluid Mechanics	3	3	0	Differential Equations
	Reservoir Rocks Properties	3	3	0	Petroleum Geology
	Thermodynamics-II	3	3	0	Thermodynamics-I
	Heat Transfer	3	3	0	Fluid Mechanics
	Reservoir Fluid Properties	3	3	0	Thermodynamics-I
	Drilling Engineering-I	3	3	0	Fluid Mechanics
	Reservoir Rocks Properties Lab	1	0	1	Reservoir Rocks Properties
	Fluid Mechanics Lab	1	0	1	Fluid Mechanics
	Workshop	1	0	1	-----
	Reservoir Engineering-I	3	3	0	Reservoir Rocks Properties, Reservoir Fluid Properties
	Mass Transfer	3	3	0	Heat Transfer
	Mathematics Application in Petroleum Engineering	3	3	0	Heat Transfer
	Fluid Properties Lab	1	0	1	Reservoir Fluid Properties
	Heat Transfer lab	1	0	1	Heat Transfer
	Internship	2	0	2	(after passing 100 credits)
	Process control	3	3	0	Fluid Mechanics
	Production Operations	3	3	0	Reservoir Engineering-I
	Well Logging	3	3	0	Reservoir Engineering-I
	Fundamentals of Oil and Gas Well Testing	3	3	0	Reservoir Engineering-I
	Enhanced oil recovery Techniques	3	3	0	Reservoir Engineering-I

	Management and conservation of reservoirs	2	2	0	
	Corrosion of Metals in Oil Industry	2	2	0	Chemistry-I, Statics and Strength of Materials
	Well completions and stimulation	2	2	0	
	Process Control lab	1	0	1	Process control
	Final Project	3	0	3	
Total Credits		78			

Elective Courses (not complete)

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Petroleum History	2	2	0	
	Unit Operations-I	3	3	0	
	English for Petroleum Eng.	2	2	0	English Language
Total Credits		7			

Total Credits (All Courses)

Mathematics-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Mathematics-I	3	3	0	-----

Calculus I, consisted principally of one-variable Calculus, Functions, Derivative, Integrals, Integration Methods, Complex Numbers and Infinite Series.

Mathematics-II

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Mathematics-II	3	3	0	Mathematics-I

The main scope of this course is to teach the students some topics in Introductory Linear Algebra including Matrix Algebra and Linear Transformations and Multivariable Calculus including Multivariable Functions, Directional and Partial Derivatives, Velocity and Acceleration, Tangent Plane and Normal Gradient Line, Cylindrical and Spherical Coordinates, Vector Field and Line Integrals, Surface Integral, Green's Theorem, Divergence Theorem and Stoke's Theorem.

Differential Equations

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Differential Equations	3	3	0	Mathematics-II

Introduction to Differential Equations; First Order Differential Equations; Second Order Linear Equations; Higher Order Linear Equations; Series Solutions of Second Order Linear Equations; The Laplace Transform; Systems of First Order Linear Equations.

Engineering Mathematics

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Engineering Mathematics	3	3	0	Differential Equations

Engineering mathematics is a branch of applied mathematics that concerns itself with mathematical methods and techniques that are typically used in engineering and industry. Engineering mathematics consisted principally of Fourier analysis, Partial differential equations, Complex analysis, Integral transforms and Calculus of variations. Contents covered in this course:

Fourier series, Integrals and The Fourier Transform; Partial Differential Equations; Complex Analysis; Calculus of Variations.

Physics-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Physics-I	3	3	0	-----

To provide tools by which students can learn how to effectively read scientific material, identify fundamental concepts, reason through scientific questions, and solve quantitative problems. Physics-I is the first course of this set. This course covers the fundamental concepts in Classical Mechanics and Thermodynamics.

Physics I-Lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Physics I-Lab	1	0	1	Physics-I

The main goal of this course is to introduce students to practical topics of Physics-I. Topics covered in this course:

Inclined planes experiments; Thermal conductivity of materials testing; Pendulum and Spring tests; Calculating the friction of different surfaces.

Physics-II

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Physics-II	3	3	0	Physics-I

The main goal of fundamental courses in physics is to provide tools by which students can learn how to effectively read scientific material, identify fundamental concepts, reason through scientific questions, and solve quantitative problems. Physics-II is the second course of this set. This course covers the fundamental concepts in Electromagnetism and includes:

Electric Charge and Electric Field; Gauss's Law; Electric Potential; Capacitance and Dielectrics; Current, Resistance, and Electromotive Force; Direct-Current Circuits; Magnetic Field and Magnetic Forces; Sources of Magnetic Field; Electromagnetic Induction; Inductance; Alternating Current; Electromagnetic Waves.

Physics-II Lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Physics-II Lab	1	0	1	Physics-II

Examination of various materials thermal resistance; Examination of Gauss's Law; Magnetic force testing; Electrical currents testing.

Chemistry- I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Chemistry-I	3	3	0	-----

The overall goal of General Chemistry courses is to teach students to think about the properties and behavior of the macroscopic world in terms of the structure and arrangement of the constituent molecules and atoms.

Chemistry-II

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Chemistry-II	2	2	0	Chemistry-I

Chemical kinetics, chemical equilibrium, acids and bases, electrochemistry and cells, solubility products, nuclear chemistry.

Chemistry Lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Chemistry Lab	1	0	1	Chemistry-I

Chemistry is an experimental science. This means that, in general, chemical theories have followed observations made in the lab. Topics covered in this course:

Measuring Density of Liquids and Solids; Predict the Salt Content of a Solution from Its Density; Separation and Identification of Food Dyes by Paper Chromatography; Qualitative Analysis Naming Inorganic Compounds; Transition Metal Complexes; Titrations of Acids and Bases; Buffered Solutions, Designing Solutions to Resist Changes in PH.

Organic Chemistry

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Organic Chemistry	3	3	0	Chemistry-II

Hydrocarbons; Alkanes, Alkenes, Alkynes, and Benzene; Alcohols, Phenols and Ethers; Aldehydes and Ketones; Carboxylic Acids and Amines; Condensation and Hydrolysis; Amino Acids and Proteins; Metabolism; the Citric Acid cycle; Oxidative Phosphorylation; Glycolysis.

Organic Chemistry Lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Organic Chemistry Lab	1	0	1	Organic Chemistry

This course is intended to introduce you to major concepts and techniques in organic chemistry through laboratory experiments. The Organic Chemistry Lab course will provide training in the techniques of the organic chemistry laboratory, such as carrying out chemical reactions and purification of chemical mixtures. Purification methods such as recrystallization, extraction, distillation, and column chromatography will be utilized. Expanding your knowledge base and critical thinking skills will help you to prepare for a wide array of potential future challenges,

including the upper level courses, organic requirements for medical schools, and independent research.

Physical Chemistry

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Physical Chemistry	2	2	0	Organic Chemistry

Behavior of gases: equation of state of ideal and real gases, heat capacity of an ideal gas, mixtures of ideal gases. The first law of thermodynamics: intensive and extensive properties, internal energy and the first law of thermodynamics, chemical equilibrium, enthalpy of formation and the Hess law, heat of reactions. The second law of thermodynamics, the statistical interpretation of entropy.

Computer Application in Petroleum Engineering

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Computer Application in Petroleum Engineering	3	3	0	Mathematics-II

Types of computers; Programming languages; C++ programming; Calculation expressions; Mathematical functions; Indexed variables; Practical software

In the practical part of this course, some useful petroleum related computer software will be instructed.

Geology

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Geology	2	2	0	-----

Geological history, stratigraphical column, Precambrian, Phanerozoic, Surface Processes, Weathering, Erosion and deposition, Minerals, Igneous rocks, sedimentary rocks, Destrial sediments, chemical and biochemical sediments, Metamorphic rocks, Geological structures, Folds, Faults, Joints, The effect of inner and outer processes on engineering.

Statics and Strength of Materials

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Statics and Strength of Materials	3	3	0	Mathematics-II

This course presents analytical mechanics of particles, rigid bodies and mechanical structures when the system is in static equilibrium. It also presents calculation of the deformation of various bodies under a variety of loads.

Structural Geology

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Structural Geology	3	3	0	Geology

Structural geology is the study of processes and products of rock deformation. This course introduces the techniques of structural geology through a survey of the mechanics of rock deformation, a survey of the features and geometries of faults and folds, and techniques of strain analysis. Regional structural geology and tectonics are introduced.

Introduction to Petroleum Engineering

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Introduction to Petroleum Engineering	2	2	0	

This Course will introduce students to the fundamental concepts of petroleum engineering- namely petro-physical analysis, reservoir engineering, drilling and petroleum economics and resource evaluation.

Energy and Materials

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Energy and Materials	3	3	0	(after the third semester)

Principles of engineering calculations. the mass balance equation, systems of simultaneous equations, recycle, bypass, purge, properties of gases; liquids; and solids, saturation and equilibriums, partial saturation, the energy balance equation for closed and open systems, calculation of sensible heat, enthalpy change of phase transition and chemical reactions, simultaneous solution of mass and energy balance equations, psychometric chart.

Petroleum Geology

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Petroleum Geology	3	3	0	Structural Geology

This module aims to develop an understanding of processes and prerequisites required for the formation of a complete petroleum system (i.e. how petroleum reservoirs form). The module additionally provides an introductory overview of various methods used in petroleum exploration and production.

Thermodynamics-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Thermodynamics-I	3	3	0	Energy and Materials

Learning the fundamental laws of thermodynamics. Topics covered in this course:

Definitions; Properties of Pure Substance; Work and Heat; First Law of Thermodynamics.

Fluid Mechanics

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Fluid Mechanics	3	3	0	Differential Equations

Fluid statics: pressure force on surfaces, buoyancy, fluid dynamics: continuity, energy and momentum principles, dimensional analysis & hydraulic similitude, drag force, laminar-flow, flow in pipes.

Reservoir Rocks Properties

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Reservoir Rocks Properties	3	3	0	Petroleum Geology

Petro-physical properties of reservoir rocks and measurement procedures: Coring and core handling; sandstone and carbonate reservoir rock and pore types; fundamental porosity, grain density, permeability and saturation properties; special core analysis such as mechanical, acoustic and electrical properties; multiphase rock and fluid interactions, interfacial tension, capillary pressure, wettability and relative permeability properties.

Thermodynamics-II

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Thermodynamics-II	3	3	0	Thermodynamics-I

Learning different cycles, the second law of thermodynamics. Topics covered in this course:

Second Law of Thermodynamics; Entropy; Cycles; Thermodynamic Relations; Mixtures; Chemical Reactions; Compressible Flow.

Heat Transfer

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Heat Transfer	3	3	0	Fluid Mechanics

Learning different mechanisms of heat transfer in solids and fluids. Topics covered in this course:

Introduction; Conduction Heat Transfer; Convection, Internal Flows; Convection, External Flows; Heat Exchangers.

Reservoir Fluid Properties

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Reservoir Fluid Properties	3	3	0	Thermodynamics-I

Fluid fundamentals; Dry gas models; Brine models; Wet gas models; Dead oil models; Black oil models; Volatile oil models; Gas condensate models; Fluid sampling; Laboratory tests; Reading a PVT report; Quality checks on a PVT report; Corrections to laboratory data; Equations of State; Tuning Equations of State.

Drilling Engineering-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Drilling Engineering-I	3	3	0	Fluid Mechanics

The aim of this module is provide advanced teaching in Drilling Engineering, including:

Prepare for drilling by through defining the well objectives and calculating pore pressure; Plan well placement and describe how drilling will proceed; Calculate the necessary drilling parameters, including mud composition and weight; Design casing design, cementing; Plan wellbore surveys; Describe how to drill safely.

Reservoir Rocks Properties Lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Reservoir Rocks Properties Lab	1	0	1	Reservoir Rocks Properties

This course provides a practical introduction to the petro-physical properties of reservoir rocks and measurement procedures.

Fluid Mechanics Lab.

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Fluid Mechanics Lab	1	0	1	Fluid Mechanics

Selected experiments covering the main subjects of fluid mechanics, Introduction to fluidic currents and forces applied to objects; Studying the Law of Viscosity; Understanding the amount of torsion stress applied to walls of the shells.

Workshop

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Workshop	1	0	1	-----

Practical introduction to partial repairs in various fields such as: Pumps, Turbines and Compressors; Different types of machinery in production plants and drilling well; Electronic equipment used to measure and control the amount, pressure and temperature of oil in pipes and containers.

Reservoir Engineering-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Reservoir Engineering-I	3	3	0	Reservoir Rocks Properties, Reservoir Fluid Properties

Introduction to Role & responsibilities; Reservoir Geology and Geophysics; Characterization of Reservoir Rocks; Fluids and PVT Studies; Volumetric Evaluation of Oil and Gas in Place; One-Phase Fluid Mechanics & Well Test Interpretation; Multi-phase Flow; Primary Recovery, Estimation of Reserves; Secondary and Enhanced Oil Recovery; Reservoir Simulation Models; Development of a Field

Mass Transfer

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Mass Transfer	3	3	0	Heat Transfer

Fundamentals of mass transfer, molecular diffusion in fluids, mass transfer coefficients, interphase mass transfer, equipment for gas-liquid operations and gas absorption.

Mathematics Application in Petroleum Engineering

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Mathematics Application in Petroleum Engineering	3	3	0	Heat Transfer

Mathematical modeling of processing systems. Review of analytical solution of algebraic and ordinary differential equations sets, numerical integration and differentiation. Interpolation, extrapolation, curve fitting. Numerical solution of algebraic and ordinary differential equations. Solution of partial differential equations implementing combination and separation of variables.

Petroleum Engineering

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Fluid Properties Lab	1	0	1	Reservoir Fluid Properties

This course provides a practical introduction to the properties of reservoir fluids and different models related to reservoir fluids.

Heat Transfer lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Heat Transfer lab	1	0	1	Heat Transfer

The heat transfer lab is comprised of the following set of experimental rigs: Temperature distribution in solids, heat transfer by convection, thermal radiation unit, heat transfer coefficient in heat exchangers (with & without fins), heat transfer coefficient in wet cooling towers, the temperature distribution in the fluid films, heating liquids, heat transfer coefficient in condensation.

Internship

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Internship	2	0	2	(after passing 100 credits)

Practical introduction of studied courses through the university, in industrial environments.

Process Control

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Process control	3	3	0	Fluid Mechanics

Introduction to process control, Laplace transformation, linear system responses control and final control element systems, block diagram and closed loop transfer functions, stability, root-locus, frequency response, design of control systems implementing frequency response, NY-Quist stability analysis, control valve, ...

Production Operations-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Production Operations	3	3	0	Reservoir Engineering-I

Oil production system; Reservoir fluid properties; Introduction to well completion methods; Reservoir deliverability; Vertical lift performance; Well deliverability; Surface gathering system; Production optimization.

Well Logging

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Well Logging	3	3	0	Reservoir Engineering-I

An introduction to the basics of modern well logging techniques in the oil and gas industry. The main focus will be the interpretation of various logs individually and in combination.

Fundamentals of Oil and Gas Well Testing

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Fundamentals of Oil and Gas Well Testing	3	3	0	Reservoir Engineering-I

Well Testing Objectives; Basics of Well Testing Interpretation; Surface Well Testing; Testing Data Acquisition; Fluid Sampling and Analysis; Drill-Stem Testing; Tubing Conveyed Perforating; HSE Best Practices.

Enhanced Oil Recovery Techniques

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Enhanced oil recovery Techniques	3	3	0	Reservoir Engineering-I

Fundamentals and theory of enhanced oil recovery; polymer flooding, surfactant flooding, miscible gas flooding and steam flooding; application of fractional flow theory; strategies and displacement performance calculation.

Management and Conservation of Reservoirs

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Management and conservation of reservoirs	2	2	0	

General management and management of Iran's oil-rich regions; Introduction to the management of oil fields and reservoirs; Initial planning of reservoir exploration; The most recent related technologies; Conservation of productive wells; Computations of reservoir fluids and their applications in reservoir productivity.

Corrosion of Metals in Oil Industry

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Corrosion of Metals in Oil Industry	2	2	0	Chemistry-I, Statics and Strength of Materials

This course covers the electrochemical and technical aspects of the corrosion damage in oil pipelines. It first gives an introduction to the nature of the multiphase flows in oil pipelines, including the hydrocarbons, water, dissolved gases and other substances that drive the internal deterioration of steel pipelines. It explains the corrosivity of the multiphase flows. This is provided in the perspectives of the corrosion mechanisms, and the physical, chemical and metallurgical factors that govern the corrosion behavior and modes. It covers the methods and measures used to evaluate and control corrosion in pipelines, and the experimental methods used to evaluate the electrochemistry and corrosion products in laboratory experiments.

Well Completions and Stimulation

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Well completions and stimulation	2	2	0	

The objective of this course is to provide students the broad understanding of petroleum well completion process. The course covers the fundamental principles of the design and evaluation of well completions, casing design in various loading condition with various downhole situations; placement of casing, liners and well tubing; cementing techniques; perforation techniques; gravel packing; sand control and measurement, use of different sand control devices; fundamentals of fracturing including acid fracturing and hydraulic fracturing; and matrix acidizing. This course also covers the broad overviews of various completion techniques, tools, and wellhead types, and surface gathering systems.

Process Control lab

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Process Control lab	1	0	1	Process control

Processes control lab is comprised of the following set of experimental rigs: First Order Systems, second order systems, air systems, feedback control of various process operations, dynamics of process components such as temperature sensors and pneumatic valves, ...

Final Project

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Final Project	3	0	3	

Teaching students how to do researches, gather information, categorize data and present results based on data.

Petroleum History

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Petroleum History	2	2	0	

The history of oil explorations; The main oil and gas sources in different countries; Oil consuming industries; Oil history in middle east; Introduction to the structure of the Organization of the Petroleum Exporting Countries (OPEC).

Unit Operations-I

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	Unit Operations-I	3	3	0	

Distillation, liquid-liquid extraction, and leaching.

English for Petroleum Eng.

Course Code	Course Title	Credits	Theoretical	Practical	Pre-requisite
	English for Petroleum Eng.	2	2	0	English Language

This course provides an introduction to the technical words and expressions within the field of Petroleum Engineering.

Total	Guide			Course title		Petroleum Engineering-B.S. Semester Chart										Semester	
	PE Petroleum Eng.		G General Course														
	S Science	E Elective Course	Credits	Course type													
18	Physics Lab-I		Persian Language		English Language		Geology		Chemistry-I		Physics-I		Mathematics-I				1
	1	S	3	G	3	G	2	S	3	S	3	S	3	S			
19	Chemistry Lab		Islamic Thoughts-I		Introduction to Petroleum Engineering		Structural Geology		Statics and Strength of Materials		Chemistry-II		Physics-II		Mathematics-II		2
	1	S	2	G	2	PE	3	PE	3	PE	2	S	3	S	3	S	
19	Physics Lab-II		Islamic Thoughts-II		Physical Education		Computer Application in Petroleum Engineering		Petroleum Geology		Energy and Materials		Differential Equations		Organic Chemistry		3
	1	S	2	G	1	G	3	S	3	PE	3	PE	3	S	3	S	
17	Exercise-I		Workshop		Organic Chemistry Lab		Analytical History of Islam		Reservoir Rocks Properties		Engineering Mathematics		Fluid Mechanics		Thermodynamics-I		4
	1	G	1	PE	1	S	2	G	3	PE	3	S	3	PE	3	PE	
18	Physical Chemistry		Islamic Revolution of Iran		Fluid Mechanics Lab		Reservoir Rocks Properties Lab		Drilling Engineering-I		Reservoir Fluid Properties		Heat Transfer		Thermodynamics-II		5
	2	S	2	G	1	PE	1	PE	3	PE	3	PE	3	PE	3	PE	
17	Internship		Rite of Life (Applied Ethics)		Heat Transfer lab		Fluid Properties Lab		English for Petroleum Eng.		Mathematics Application in Petroleum Engineering		Mass Transfer		Reservoir Engineering-I		6
	2	PE	2	G	1	PE	1	PE	2	E	3	PE	3	PE	3	PE	
17					The Holy Quran Exegesis		Petroleum History		Fundamentals of Oil and Gas Well Testing		Well Logging		Production Operations		Process Control		7
					2	G	2	E	3	PE	3	PE	3	PE	3	PE	
17	Final Project		Process Control lab		Family and Population Knowledge		Unit Operations-I		Well completions and stimulation		Corrosion of Metals in Oil Industry		Management and conservation of reservoirs		Enhanced oil recovery Techniques		8
	3	PE	1	PE	2	G	3	E	2	PE	2	PE	2	PE	3	PE	