PETROLEUM UNIVERSITY OF TECHNOLOGY
Petroleum Faculty of Tehran

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Course Description

B.Sc. Accounting

Programme Coordinator;

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Overview

The B.Sc. Accounting in Petroleum University of Technology contians 140 credits;

Special Courses: 68 Credits

Basic Courses: 51 Credits

General Courses: 21 Credits

No.	Course Name	Course Code	Credits	Hours
1	Basic Mathematics	2215	3	51
2	Mathematics with Application for Management	2212	3	51
3	Probability and Statistics with its Application in Management	2213	3	51
4	Operations Research I	2219	3	51
5	Operations Research II	2216	3	51
6	Computer Programming Principles	2218	3	51
7	Computer Basics	2211	3	51
8	Production Management	2223	3	51
9	Principles of Economics I (Microeconomics)	2220	3	51
10	Principles of Economics II (Macroeconomics)	2221	3	51
11	Economic Growth and Planning	2226	3	51
12	Petroleum and Energy Economics	2224	3	51
13	Money, Banking and Exchange	2225	3	51
14	Government and non-profit organization Budgeting	2422	3	51
15	International Finance	2423	3	51

16	Financial Management I	2439	3	51
17	Financial Management II	2442	2	34
18	Research Method	2222	3	51
19	Government and non-profit organizations accounting	2446	3	51
20	Accounting Principles I	2430	4	48
21	Accounting Principles II	2431	4	48
22	Accounting Principles III	2432	4	48
23	Intermediate Accounting I	2435	4	48
24	Intermediate Accounting II	2437	4	48
25	Advanced Accounting I	2441	3	51
26	Advanced Accounting II	2447	3	51
28	Cost Accounting I	2434	3	51
29	Cost Accounting II	2436	3	51
30	Cost Accounting III	2443	3	51
31	Petroleum Accounting	2448	3	51
32	Tax Accounting	2433	2	48
33	Auditing I	2438	3	51
34	Auditing II	2444	3	51
35	Internal Auditing	2450	2	48
36	Organization and Management	2420	3	51
37	Theory and Design of Systems	2449	3	51
38	Petroleum Contracts and related Issues	2217	3	51
39	Business Law	2214	3	51
40	Accounting Information Systems	2230	2	48
41	Physical Education I	2104	1	34
42	Physical Education II	2106	1	34
43	General Persian	2108	3	51
44	Islamic Thought I	2103	2	48
45	Islamic Thought II	2109	2	48
46	Analytical History of Islam	2107	2	48
47	The Islamic Republic of Iran	2111	2	48
48	Subjective interpretation of the Quran	2110	2	48
49	Islamic Ethics	2100	2	48
50	English Language I	2101	2	48
51	English Language II	2102	2	48
52	Special Language I	2451	2	48
53	Special Language II	2452	2	48
Total			**140 Credits**	**2544 Hours**

Course Code: 2215
Course Title: Basic Mathematics
Credits: 3
Prerequisites: None

Course Outline:

Limits and Continuity, Continuity Applied to Inequalities, **Differentiation**, The Derivative, Rules for Differentiation, The Derivative as a Rate of Change, The Product Rule and the Quotient Rule, The Chain Rule, Derivatives of Logarithmic Functions, Derivatives of Exponential Functions, Implicit Differentiation, Logarithmic Differentiation, Newton's Method, Higher-Order Derivatives, **Curve Sketching**, Relative Extrema, Absolute Extrema on a Closed Interval, Concavity, The Second-Derivative Test, Asymptotes, Applied Maxima and Minima, **Integration;** Differentials, The Indefinite Integral, Integration with Initial Conditions, Techniques of Integration, The Definite Integral, The Fundamental Theorem of Integral Calculus, Approximate Integration, Area between Curves, Consumers' and Producers' Surplus, **Methods and Applications of Integration**, Integration by Parts, Integration by Partial Fractions, Integration by Tables, Average Value of a Function, Differential Equations, Applications of Differential Equations, Improper Integrals, **Continuous Random Variables**, Continuous Random Variables, The Normal Distribution, The Normal Approximation to the Binomial Distribution, **Multivariable Calculus**, Partial Derivatives, Applications of Partial Derivatives, Implicit Partial Differentiation, Higher-Order Partial Derivatives, Chain Rule, Maxima and Minima for Functions of Two Variables, Lagrange Multipliers, Lines of Regression, Multiple Integrals

Reference Book; Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences, Ernest F. Haeussler, Richard S. Paul, Richard J. Wood, Pearson Education

Course Code: 2212
Course Title: Mathematics with its application in Management
Credits: 3
Prerequisites: 2215

Course Outline:

Mathematics of Finance, Compound Interest, Present Value, Interest Compounded Continuously, Annuities, Amortization of Loans, Perpetuities, **Matrix Algebra**, Matrices, Matrix Addition and Scalar Multiplication, Matrix Multiplication, Solving Systems by Reducing Matrices, Solving Systems by Reducing Matrices, Inverses, Leontief's Input-Output Analysis, Determinants The Properties of Determinants, Permutations and Cofactors, Cramer's Rule, Inverses, and Volumes **Linear Programming**, Linear Inequalities in Two Variables, Linear Programming, Multiple Optimum Solutions, The Simplex Method, Degeneracy, Unbounded Solutions, and Multiple Solutions, Artificial Variables, Minimization, The Dual

The course also includes 17 hours for learning Application of Matlab ^{TM} software

Reference Book; Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences, Ernest F. Haeussler, Richard S. Paul, Richard J. Wood, Pearson Education

Course Code: 2213
Course Title: Probability and Statistics with its application in Management
Credits: 3
Prerequisites: 2212

Course Outline:

Descriptive Statistics, Organizing Data, Variables and Data, Organizing Qualitative Data, Organizing Quantitative Data, Distribution Shapes, Misleading Graphs, **Descriptive Measures**, Measures of Center, Measures of Variation, The Five-Number Summary; Boxplots, Descriptive Measures for Populations; Use of Samples, The Empirical Rule and Chebyshev's Theorem, **Probability** Basics, Events, Rules of Probability, Contingency Tables; Joint and Marginal Probabilities, Conditional Probability, The Multiplication Rule; Independence, Bayes' Rule, Counting Rules, Discrete Random Variables and Probability Distributions, The Mean and Standard Deviation of a Discrete Random Variable, The Binomial Distribution, The Poisson Distribution, **The Normal Distribution**, Introducing Normally Distributed Variables, Areas Under the Standard Normal Curve, Assessing Normality; Normal Probability Plots, Normal Approximation to the Binomial Distribution, Sampling Error; the Need for Sampling Distributions, The Mean and Standard Deviation of the Sample Mean, The Sampling Distribution of the Sample Mean, **Inferential Statistics**, **Confidence Intervals for One Population Mean**, Estimating a Population Mean, Confidence Intervals for One Population Mean When σ Is Known, Margin of Error, Confidence Intervals for One Population Mean When σ Is Unknown, **Hypothesis Tests for One Population Mean**, The Nature of Hypothesis Testing, Critical-Value Approach to Hypothesis Testing, *P*-Value Approach to Hypothesis Testing, Hypothesis Tests for One Population Mean When σ Is Known, Hypothesis Tests for One Population Mean When σ Is Unknown, The Wilcoxon Signed-Rank Test, Type II Error Probabilities; Power**, Chi-Square Procedures**, The Chi-Square Distribution, Chi-Square Goodness-of-Fit Test, Contingency Tables; Association, Chi-Square Independence Test, Chi-Square Homogeneity Test, **Regression, Correlation, and ANOVA- Descriptive Methods in Regression and Correlation**, Linear Equations with One Independent Variable, The Regression Equation, The Coefficient of Determination, Linear Correlation, **Inferential Methods in Regression and Correlation**, The Regression Model; Analysis of Residuals, Inferences for the Slope of the Population Regression Line, Estimation and Prediction, Inferences in Correlation, Testing for Normality, **Analysis of Variance (ANOVA)**, The *F*-Distribution, One-Way ANOVA: The Logic, One-Way ANOVA: The Procedure, Multiple Comparisons, The Kruskal–Wallis Test

The course also includes 17 hours for learning application of SPSS ™ software

Reference Book; Introductory Statistics, Neil A. Weiss, Pearson

Course Code: 2219
Course Title: Operations Research (1)
Credits: 3
Prerequisites: 2212-2213

Course Outline:

Introduction to Linear Programming , Solving Linear Programming Problems: The Simplex Method , The Theory of the Simplex Method , Duality Theory and Sensitivity Analysis, Other Algorithms for Linear Programming , The Transportation and Assignment Problems , Network Optimization Models , Dynamic Programming , Integer Programming , Nonlinear Programming , Metaheuristics

Reference Book; Introduction to Operations Research, Frederick S Hillier, Gerald J Lieberman, McGraw-Hill