Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Statistics (0670202)
Prerequisite:	Calculus (I) (0250105)
Credit Hours:	2 credit hours (15 weeks per semester, approximately 30 contact hours)
Textbook:	Applied Statistics and Probability, 3 rd edition, Douglas C. Montgomery, George C. Runger.
References:	Statistics and Probability for Engineers and Sciences , 6 th edition ,William M.,Terry L.
Course Description:	Statistics provides an introduction to selected important topics and concepts. This course represents an introduction for undergraduate students to the field and provides knowledge for kind of statistical studies and their graphical presentation. Specific topics include tools for describing central tendency and dispersion of data; probability concepts; statistical hypothesis testing and its application to group comparisons; methods of sampling and various statistical measures.
Website:	http://www.philadelphia.edu.jo/academics
Instructor:	Eng. Adnan Abdelhadi **Email**: aabdelhadi@philadelpia.edu.jo **Office**: Civil Engineering Building, Room 61-301 / A **Class hours**: Monday & Wednesday :$9^{:15}$ – $11^{:15}$ **Office hours**: Sun, Tue, Thu:$10^{:00}$-$11^{:00}$ & $12^{:00}$ – $1^{:00}$ and Mon.& Wed.$9^{:15}$-$11^{:15}$

Course Outlines:

Week	Topic
1 , 2	Course Introduction, The role of statistics in engineering, Types of Statistics
3 , 4	Types of Statistics, Types of Variables, Levels of Measurement Organizing Data.
5 , 6	Graphic Presentation of Frequency Distribution,
7 , 8	Measures of Central Tendency, Measures of Variation, Measures of position.
9 , 10	Probability Theory, Discrete Random Variables and Probability Distribution
11 , 12	Discrete Random Variables and Probability Distribution.
13 , 14	Continuous Random Variables
15	Regression and correlation
16	Review & Final Examination

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Identify the need of statistics in Engineering	[1, 2]
2.	Defining the various topics required in Statistics	[2, 3]
3.	Ability to solve and analyze the various Probability concepts	[1, 2, 6]
4.	Understanding the mean of Regression	[3, 6]
5.	Ability to interpret the statistical results	[1, 2, 3 , 6]
6.	Knowing how to deal with different types of data	[1,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Statistics (0670203)
Prerequisite:	Calculus (I) (0250105)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Applied Statistics and Probability, 3 rd edition, Douglas C. Montgomery, George C. Runger.
References:	Statistics and Probability for Engineers and Sciences , 6 th edition ,William M.,Terry L.
Course Description:	Statistics provides an introduction to selected important topics and concepts. This course represents an introduction for undergraduate students to the field and provides knowledge for kind of statistical studies and their graphical presentation. Specific topics include tools for describing central tendency and dispersion of data; probability concepts; statistical hypothesis testing and its application to group comparisons; methods of sampling and various statistical measures.
Website:	http://www.philadelphia.edu.jo/academics
Instructor:	Eng. Adnan Abdelhadi **Email:** aabdelhadi@philadelphia.edu.jo **Office:** Civil Engineering Building, Room 61-301 / A **Class hours:** Monday & Wednesday :9:15 – 11:15 **Office hours:** Sun, Tue, Thu:10:00-11: 00 & 12:00 – 1:00 and Mon.& Wed.9:15-11:15

Course Outlines:

Week	Topic
1 , 2	Course Introduction, The role of statistics in engineering, Types of Statistics
3 , 4	Types of Statistics, Types of Variables, Levels of Measurement Organizing Data.
5 , 6	Graphic Presentation of Frequency Distribution,
7 , 8	Measures of Central Tendency, Measures of Variation, Measures of position.
9 , 10	Probability Theory, Discrete Random Variables and Probability Distribution
11 , 12	Discrete Random Variables and Probability Distribution.
13 , 14	Continuous Random Variables
15	Regression and correlation
16	Review & Final Examination

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Identify the need of statistics in Engineering	[1, 2]
2.	Defining the various topics required in Statistics	[2, 3]
3.	Ability to solve and analyze the various Probability concepts	[1, 2, 6]
4.	Understanding the mean of Regression	[3, 6]
5.	Ability to interpret the statistical results	[1, 2, 3 , 6]
6.	Knowing how to deal with different types of data	[1,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Statics (0670211)
Prerequisite:	Calculus II (0250102)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Engineering Mechanics – Statics, SI Edition, 13th edition, Vol. 1, R. C. Hibbeler and Kai Beng Yap, PEARSON, 2013
References:	Engineering Mechanics – Statics, 7th edition, Vol. 1, J. L. Meriam and L.G. Kraige, John Wiley and Sons, 2012 Engineering Mechanics – Statics, 3rd edition, A. Pytel and J. Kiusalaas, Cengage Learning, 2010.
Course Description:	The main purpose of this course is to provide the student with a clear view of the theory and applications of engineering mechanics. This includes the force vector, force system resultants, free body diagram of forces and equilibrium of particles and rigid bodies, moment of a force about a point and about an axis, equilibrium of rigid bodies, analysis of trusses and frames, shear forces and bending moment diagrams, center of area and moment of inertia of a composite area.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil Engineering Building, Room 315 **Class hours**: Sun, Tues, Thurs: 12:10-13:10 **Office hours**: Sun, Tues, Thurs: 11:10-12:10 and Mon, Wed: 9:45-11:15

Course Outlines:

Week	Topic
1 , 2	Introduction (general principles)
3 , 4	Force vectors
5 , 6	Equilibrium of a particle
7 , 8 , 9	Force system resultants
10 , 11	Equilibrium of a rigid body
12 , 13	Structural analysis of Trusses
14 , 15	Internal forces (Shear and moment diagrams)

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand force vector, components and resultants.	[1, 6 , 7]
2.	Determine the moment of a force about a point.	[1, 6 , 7]
3.	Replace and move forces out of their line of action	[1, 6 , 7]
4.	Determine the reactions of a rigid body	[1, 6, 7]
5.	Perform analysis of trusses and frames	[1, 6, 7]
6.	Draw shear and moment diagrams of a beam	[1, 6, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Construction Materials (0670214)
Prerequisite:	(0670105)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	A.M .Neville and J.J .Brooks;:Concrete Technology" .1986
References:	D. Tayler" Construction of material,1989
Course Description:	The structure of materials, power full atomic and energy relationship, properties of the nucleus ,Electron shells, and radioactivity, general classification of Construction materials, atomic of bonds, solid state structure, metallic crystalline structure, properties and crystal defects, polymers structure ,Elastic/plastic deformation, cracks, creep, fatigue. Bonding materials(cements),and aggregates, quality of water ,Admixtures ,fresh concrete properties. Concrete operations, mixing, handling, compacting curing of concrete, and bricks work.
Website:	http://www.philadelphia.edu.jo/academics/aalfraihat/page.php?id=36
Instructor:	Eng. Adnan Abdelhadi Email: aabdelhadi@philadelpia.edu.jo Office: Civil Engineering Building, Room 61-301 / A Class hours: Sun,Tue & Thur :9:10 – 10:00 Office hours: Sun, Tue, Thu:10:00-11: 00 & 12:00 – 1:00 and Mon.& Wed.9:15-11:15

Course Outlines:

Week	Topic
1	Introduction The structure of material powerful atomic and energy relationship , properties of nucleus, types of bonds:
2	Radioactivity, General classification and structure of construction materials, structure and properties of metal ,crystal defects.
3	Polymers ,Properties of solid materials, Ceramic Structures
4, 5	Portland Cement, Properties of Aggregate , Mechanical properties of materials
6, 7, 8	Quality of Water Mixing ,Handing placing of concrete ,
9, 10, 11	Transporting and handling Compacting of concrete Admixture ,Methods of curing

12, 13	Mix Design of concrete
14	Testing of concrete
15	Brick and Brick work
16	Review, and final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	To introduce and detail the main concepts of relationship between structure and properties of materials	[2,3,7]
2.	To Understand structure and properties of classes construction materials,	[3,7]
3.	To know structure and properties of cement, aggregate and water Operations of mixing ,placing ,curing of concrete ,	[6,7]
4.	To be able to develop solve an engineering problem By design of concrete mixes	[1,2]
5.	bricks work	[5,6]
6.	To understand testing of concrete and determining its properties	[1,3,5]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-6) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Building Construction and Civil Drawing (0670217)
Prerequisite:	Static 0670211 and Strength of materials (0670212)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Structural Analysis- 8th edition, by R.C Hibbeler, Pearson Prentice Hall; 2012
References:	ارتين ليقون، زهير ساكو. انشاء المباني. العراق. جامعة بغداد، ١٩٨٣. Building Construction Handout. N. Abo.Naser
Course Description:	Classification of Structural elements and Types of buildings, Classification of Loads; Classification of slab based on slab system; Analysis of isolated solid slab; Classification of reinforced concrete solid slab (one way or two way); Analysis of continuous slab; Determination of minimum thickness of slab; Calculation of dead and live load on solid and ribbed slab; Analysis of two way solid slab; Calculation of loads on reinforced beams (load coming from slab); Analysis beams supported two way slab using Actual uniform distributed load and Equivalent distributed load; Analysis of one way and two way of hollow slab; Definition of flat slab; Classification of columns; calculations of column cross section; Earth materials and Excavations; Classifications od concrete foundations; calculations of depth and area of isolated footing; construction of concrete wall, sections in concrete beams, columns, slabs, and walls.
Website:	http://www.philadelphia.edu.jo/academics/aobaidat/
Instructor:	Dr. Ala' Taleb Obaidat **Email**: aobaidat@philadelphia.edu.jo **Office**: Civil engineering building, Room 317, ext: 2692 **Class hours**: Mon, Wed: 09:10-10:00 **Office hours**: Sun, Tues, Thurs: 12:00-13:00 Mon, Wed: 10:00-12:00

Course Outlines:

Week	Topic
1	Introduction
2	Chapter 1: Classification of Structural elements and Types of buildings and Classification of Loads
3,4	Chapter 2: Classification of slab based on slab system; Analysis of isolated solid slab
5,6	Chapter 3: Classification of reinforced concrete solid slab (one way or two way); Analysis of continuous slab; Determination of minimum thickness of slab
7,8	Chapter 4: Calculation of loads on reinforced beams (load coming from slab); Analysis beams supported two way slab using Actual uniform distributed load and Equivalent distributed
10,11	Chapter 8: Analysis of one way and two way of hollow slab; Definition of flat slab; Classification of columns; calculations of column cross section;

12,13	Chapter 9: Earth materials and Excavations; Classifications od concrete foundations; calculations of depth and area of isolated footing;
14,15	Chapter 6: construction of concrete wall, sections in concrete beams, columns, slabs, and walls.

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Provide a thorough understanding and practical applications of slabs	[1, 5]
2.	Develop the skills to analyze the behavior and response of structures to various loads and constraints.	[1, 5]
3.	Analyze determinate structures (one way and two way of solid and ribbed slab) under various loading conditions.	[1, 2, 5]
4.	Determine the reaction and maximum moment on beams supported one way and two way slabs using equilibrium and compatibility equations.	[1 , 2,5]
5.	Determine reactions on columns and classify whether the column is short or slender in addition to calculate the cross section of column.	[1 , 2, 5]
6.	Provide an information about excavation of building foundation.	[1, 2, 5, 7]
7.	Determine the area of isolated footing and its thickness	[1,,2,5]
8.	Learning how to draw the section in concrete beam, slab, column, and wall	[1,5]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Geology ,0670231
Prerequisite:	250105
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Engineering Geology ,Principles and Practice, by David George
References:	Engineering Geology G Bell , second edition.
Course Description:	Engineering geology is an applied geology discipline that involves the collection, analysis, and interpretation of geological data and information required for the safe development of civil works. Engineering geology is a multidisciplinary field that combines geology and engineering. Geologic data and principles are used with engineering principals and techniques in order to study and work with rock and soil surficial materials and ground water. This is essential for the proper location, planning, design, construction, operation and maintenance of engineered structures. Engineering geology complements environmental geology and hydrogeology.
Website:	http://www.philadelphia.edu.jo
Instructor:	Eng. Adnan Abdelhadi Email: aabdelhadi@philadelpia.edu.jo Office: Civil Engineering Building, Room 61-301 / A Class hours: Sun, Tue, & Thur :11:10 – 12:00 Office hours: Sun, Tue, Thu:10:00-11: 00 & 12:00 – 1:00 and Mon.& Wed.9:15-11:15

Course Outlines:

Week	Topic
1	Introduction
2	Earth Structure
3,4	Minerals and their properties
5,6	Rocks and their properties
7,8	Deformations ,Stresses and Strain in Rocks
9	Modulus of Elasticity of Rocks
10	Earthquakes
12,13	Site Investigation
14,15	Soil Classification
16	General Review, and Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Ability to distinguish between geology engineering geology.	[1,2]
2.	To learn the Earth Origin and Materials.	[1,2]
3.	To identify the various types of Rocks.	[1,2]
4.	Recognize Minerals physical properties and mineral rock formation.	[1,2,7]
5.	To understand Earthquakes: Magnitude, depth and intensity.	[2,7]
6.	To be able to deal with the meaning of Geological structure: Strike and dip, Folds, Faults: types and structures, Joints.	[2,7]

Assessment Guidance:

Evaluation of the student performance during the semester (Total Final Grade) will be conducted according to the following activities:

Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 4 – 5 weeks.
Quizzes:	(3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). <u>Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.</u>
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	10%
Quizzes and participation	10%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Surveying (0670261)
Prerequisite:	Calculus (I) (250101)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Elementary Surveying, An Introduction to Geomatics, Gilani and Wolf, Pearson/Prentice Hall, 10 th Addition
References:	Elementary Surveying Gilani and Wolf, Pearson/Prentice Hall, 13 th Addition
Course Description:	The student will be introduced to the basic surveying calculations. The goal is that the student will have a feel for the accuracy, precision and limitations of the survey data and, be able to make a judgment call that the data can be relied on for inclusion into a design and/or that the survey procedures will meet the th Addition.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Eng. Adnan Abdelhadi** **Email: aabdelhadi@philadelpia.edu.jo** **Office: Civil Engineering Building, Room 61-301 / A** **Class hours: Sun, Tue, & Thur :1:10 – 2:00** **Office hours: Sun, Tue, Thu:10:00-11: 00 & 12:00 – 1:00 and Mon.& Wed.9:15-11:15**

Course Outlines:

Week	Topic
1	Units and significant figures
2	Theory of errors in observations
3	Differential and Trigonometric Leveling
4	Distance measurement
5	Angles and Directions
6	Area and Volume Calculations
7	Topographic Surveys
8	Introduction to Traverse
9	Traverse computation
10	Review & Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	To understand the meaning of surveying	2,4
2.	Apply various methods in surveying	6
3	Understand and interpret the directions and angles in surveying	6
4	Use different methods in leveling	1
5	Analyze and solve the most popular traverse types	1,6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

Mid-Term Exam	30%
Projects ,Assignments	
Quizzes and participation	20%
Final Exam	50%
Mid-Term Exam	30%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Surveying for Architects (0670265)
Prerequisite:	Calculus (I) (250101)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Elementary Surveying, An Introduction to Geomatics, Gilani and Wolf, Pearson/Prentice Hall, 10 th Addition
References:	Elementary Surveying Gilani and Wolf, Pearson/Prentice Hall, 13 th Addition
Course Description:	The student will be introduced to the basic surveying calculations. The goal is that the student will have a feel for the accuracy, precision and limitations of the survey data and, be able to make a judgment call that the data can be relied on for inclusion into a design and/or that the survey procedures will meet the th Addition.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Eng. Adnan Abdelhadi** **Email: aabdelhadi@philadelpia.edu.jo** **Office: Civil Engineering Building, Room 61-301 / A** **Class hours: Sun, Tue, & Thur :1:10 – 2:00** **Office hours: Sun, Tue, Thu:10:00-11: 00 & 12:00 – 1:00 and Mon.& Wed.9:15-11:15**

Course Outlines:

Week	Topic
1	Units and significant figures
2	Theory of errors in observations
3	Differential and Trigonometric Leveling
4	Distance measurement
5	Angles and Directions
6	Area and Volume Calculations
7	Topographic Surveys
8	Introduction to Traverse
9	Traverse computation
10	Review & Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	To understand the meaning of surveying	2,4
2.	Apply various methods in surveying	6
3	Understand and interpret the directions and angles in surveying	6
4	Use different methods in leveling	1
5	Analyze and solve the most popular traverse types	1,6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

Mid-Term Exam	30%
Projects ,Assignments	
Quizzes and participation	20%
Final Exam	50%
Mid-Term Exam	30%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Structures 1 (0670311)
Prerequisite:	Strength of materials (0670212)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Structural Analysis- 8th edition, by R.C Hibbeler, Pearson Prentice Hall; 2012
References:	Fundamentals of Structural analysis-2nd edition, by K.M. Leet, McGraw Hill, 2005
Course Description:	Classification of Structures and Loads; Analysis of Statically Determinate Structures and Trusses (Idealized Structures, Principal of Superposition, Equations of Equilibrium, Determinacy and Stability, Application of the Equations of Equilibrium, Common Types of Trusses, Classification of Coplanar Trusses, and Methods of Joints and Sections), Internal Loadings Developed in Structural Members (Internal Loadings at a Specified Point, Shear and Moment Functions, Shear and Moment Diagrams for Beams and Frames, and Moment Diagrams Constructed by the Method of Superposition); Influence Lines for Statically Determinate Structures (Influence Lines for Beams, Qualitative Influence Lines, Influence Lines for Trusses, and Maximum Influence at a Point due to a Series of Concentrated Loads); Deflections (Deflection Diagrams and the Elastic Curve, Elastic-Beam Theory, The Double Integration Method, Moment-Area Theorems, Conjugate-Beam Method); Deflections Using Energy Methods.
Website:	http://www.philadelphia.edu.jo/academics/aobaidat/
Instructor:	Dr. Ala' Taleb Obaidat **Email**: aobaidat@philadelphia.edu.jo **Office**: Civil engineering building, Room 317, ext: 2692 **Class hours**: Mon, Wed: 08:15-09:45 **Office hours**: Sun, Tues, Thurs: 12:00-13:00 Mon, Wed: 10:00-12:00

Course Outlines:

Week	Topic
1	Introduction
2	Chapter 1: Classification of structures and loads
3,4	Chapter 2: Analysis of statically determinate structures (equilibrium, superposition and determinacy)
5,6	Chapter 3: Analysis of statically determinate trusses
7,8	Chapter 4: Internal loadings in structural members
10,11	Chapter 8: Deflections
12,13	Chapter 9: Deflections using energy methods
14,15	Chapter 6: Influence lines for determinate structures

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Provide a thorough understanding and practical applications of structural analysis theories	[1, 5]
2.	Develop the skills to analyze the behavior and response of structures to various loads and constraints.	[1, 5]
3.	Analyze determinate structures (truss, beam and frame) under various loading conditions.	[1, 2, 5]
4.	Determine internal loads (axial, shear and moment) in structural members using equilibrium and compatibility equations.	[1 , 2,5]
5.	Determine reactions and internal loading in structural elements due to moving (dynamic) loads.	[1 , 2, 5]
6.	Employ deflection methods for calculation of deflection.	[1, 2, 5, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual studentwill be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Structure II (0670312)
Prerequisite:	Structure I (0670311)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Structural Analysis- 8th edition, by R.C Hibbeler, Pearson Prentice Hall; 2012
References:	Fundamentals of Structural analysis-2nd edition, by K.M. Leet, McGraw Hill, 2005
Course Description:	Analyzing the statically indeterminate beams, trusses and frames using the force method. Analyzing the statically indeterminate beams and frames using displacement methods: slope-deflection method and moment distribution method. Analyzing of trusses and beams using the stiffness method.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil engineering building, Room 315 **Class hours**: Mon, Wed: 8:15-9:45 **Office hours**: Sun, Tues, Thurs: 11:10-12:10 and Mon, Wed: 9:45-11:15

Course Outlines:

Week	Topic
1, 2, 3	Analysis of Statically Indeterminate Structures by the Force Method
4, 5, 6	Displacement Method of Analysis: Slope-Deflection Equations
7, 8, 9	Displacement Method of Analysis: Moment Distribution
10, 11, 12	Beams and Frames having Non-prismatic Members
13, 14	Truss Analysis using the Stiffness Method
15, 16	Beam Analysis using the Stiffness Method

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Analysis of Statically Indeterminate Structures by the Force Method.	[1, 2, 6, 7]
2.	Analysis of statically Indeterminate Structures using Displacement Method of Analysis: Slope-Deflection Equations.	[1, 2, 6, 7]
3.	Analysis of statically Indeterminate Structures using Displacement Method of Analysis: Moment Distribution.	[1, 2, 6, 7]
4.	Analysis of statically Indeterminate Structures having Non-prismatic Members.	[1, 2, 6, 7]
5.	Analysis of statically Indeterminate trusses using the Stiffness Method.	[1, 2, 6, 7]
6.	Analysis of statically Indeterminate beams using the Stiffness Method.	[1, 2, 6, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. <u>Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.</u>
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Structural Mechanics and Analysis (0670315)
Prerequisite:	Applied Physics (211104)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	R. C. Hibbeler, "Statics & Mechanics of Materials © 2007 Pearson Education South Asia Pte Ltd. Last updated on 27 October 2006. ISBN 13: 978-013-129-011-2 and ISBN 10 : 013-129-011-8
References:	Engineering Mechanics – Statics, 7th edition, Vol. 1, J. L. Meriam and L.G. Kraige, John Wiley and Sons, 2012 Engineering Mechanics – Statics, 3rd edition, A. Pytel and J. Kiusalaas, Cengage Learning, 2010.
Course Description:	Introduce students to the Force vectors, Force system resultants, Equilibrium of a rigid body, Structural analysis, Geometric properties and distributed loadings and internal loading, Structural systems.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil Engineering Building, Room 315 **Class hours**: Sun, Tues, Thurs: 12:10-13:10 **Office hours**: Sun, Tues, Thurs: 11:10-12:10 and Mon, Wed: 9:45-11:15

Course Outlines:

Week	Topic
1	Introduction (general principles)
2, 3	Force vectors
4	Equilibrium of a particle
5, 6	Force system resultants
7, 8	Equilibrium of a Rigid Body
8, 9	Structural Analysis
10, 11, 12	Internal Loading
13 , 14, 15	Structural Systems

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Introduce to force vector and their equilibrium to understand the effect of loading in the buildings.	[1, 6, 7]
2.	To transfer students cognitive and imaginative thinking to visualize the needed structures to hold the different loading systems.	[1, 6, 7]
3.	To upgrade students' abilities to distinguish between different structural loadings and their points of weakness.	[1, 6, 7]
4.	To provide students with means to analyze different structures and to choose the best system for their designs.	[1, 6, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Pavement Design (0670323)
Prerequisite:	Geometric Design of Highways (0670324)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Traffic and Highway Engineering by Nicholas J. Garber, Laster A. Hoel, 4 ed.
References:	- Wright, Paul H., Highway Engineering, Seventh Edition, John Wiley, New York, 2004. - Principles of pavement design by Yoder Witczak, 2nd ed., 1975 - Pavement design ,by Huang, 2nd ed., 2012
Course Description:	This course is designed for civil engineering students in their third year. This course introduces students to the pavement materials, flexible pavement mix design and construction, highway drainage and drainage facilities, and rehabilitation of roads.
Website:	http://www.philadelphia.edu.jo/academics/aassouli/
Instructor:	Eng. Amany Abdullah Ali Assouli **Email**: aassouli@philadelphia.edu.jo or eng.amanyassouli90@yahoo.com **Office**: Civil Engineering Building, Room 212/6 – E , Ext: 2513 **Class hours**: Sun, Tues, Thurs:11:10-12:00 **Office hours**: : Sun, Tues, Thurs:10:10-11:00 Mon, Wed: 11:15-12:45

Course Outlines:

Week	Topic
1	Introduction
2	Pavement types
3	Highway Materials-Soils
4	Highway Materials -Aggregates
5	Highway Materials -Aggregates
6	Highway Materials - Asphalts
7	Bases, Subbases, & Low Cost
8	Highway Type Bituminous Pavements
9	Highway Type Bituminous Pavements
10	HMA Construction and Placement
11	Flexible Pavement Thickness Design
12	Rigid Pavement Design
13	Rehabilitations and highway maintenance
14	Drainage and drainage structures
15	Project Presentation

16	FINAL EXAMS

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1	Know the Properties of materials used in highway pavements (soils, aggregates, and bituminous binders).	[1, 2, 3 ,6]
2	Know Different pavement types (flexible and rigid) and different types within each category (high-type HMA pavements, as conventional and full depth, and low cost surfaces).	[1, 2, 3 ,6]
3	Design the thicknesses of the layers composing the highway pavements	[1, 2, 3 ,6]
4	Providing adequate drainage means and facilities to guard the big investments in roadways from water damages.	[1, 2, 3 ,6]
5	Methods of designing the hot asphalt mix using Marshal Method.	[1, 2, 3 ,6]
6	Sources of distresses in the pavements and the methods of repair.	[1, 2, 3 ,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework, Projects and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title: Geometric Design of Highway (0670324)

Prerequisite: surveying (0670261)

Credit Hours: 3 credit hours (15 weeks per semester, approximately 45 contact hours)

Textbook:
- Traffic and Highway Engineering by Nicholas J. Garber, Laster A. Hoel, 4 ed.
- The Civil Engineering Hand Book, second edition. W. F. CHEN, J.y. Richard Liew

References:
- A policy on geometric design of highways and streets, 4 th edition , 2001, American Association of State Highway and Transportation Officals "AASHTO".
- Route surveying and design by mayer & Gibson, 5 th edition.
- Principles of highway engineering and traffic analysis by Fred Mannering & Walter Kilareski, 2 nd edition.

Course Description: This course is designed for civil engineering students in their third year. Geometric design concepts for highways, design control and criteria, sight distance, horizontal and vertical alignment, cross section elements, superelevation attainment, laying out highways, earthwork computations, highway types and introduction of interchanges and intersections.

Website: http://www.philadelphia.edu.jo/academics/aassouli/

Instructor:
Eng. Amany Abdullah Ali Assouli
Email: aassouli@philadelphia.edu.jo or eng.amanyassouli90@yahoo.com
Office: Civil Engineering Building, Room 212/6 – E , Ext: 2513

Class hours: Sun, Tues, Thurs:09:00-10:10
Office hours: Sun, Tues, Thurs:10:10-11:00
Mon, Wed: 11:15-12:45

Course Outlines:

Lecture	Subject
Week 1	1-Basic principles 2-Road classification
Week 2	3- Intersections & Interchanges
Week 3	4- Highway Surveys and Location - Earthwork Computations: - Average end area method. - Mass haul diagram
Week 4	5- Characteristics of the Driver, the Pedestrian, the Vehicle, and the Road.
Week 5	6- Horizontal alignment: - Stopping sight distance on horizontal curves. - Simple circular curves. - Compound circular curves. - Reverse curve. - Transition curve.
Week 6	- Setting out horizontal curves. - Curve widening.
Week 7	7- Super elevation - Standards for super elevation. - Super elevation attainment.
Week 8	8- Cross section elements: - Travel lanes. - Shoulders. - Medians. - Roadside barriers. - Side slopes.
Week 9	9- Highway drainage.
Week 10& 11	10- Vertical Alignment: - Introduction of Vertical curves. - Stopping sight distance on sag vertical curves. - Stopping sight distance on crest vertical curves.
Week 12	- Vertical curve design.
Week 13	11- Special facilities for heavy vehicle on steep grades: - Climbing lanes. - Emergency escape Ramps.
Week 14 & 15	**Projects Presentation**
Week 16	**FINAL EXAM**

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Know the elements of road .	[1, 2, 6]
2.	Determine the Characteristics of road classification.	[1, 2, 6]
3.	Design the horizontal and vertical Alignment.	[1, 2, 6]
4.	Determine the intersection	[1, 2, 6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, Midterm Exam during the semester. This exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Soil Mechanics (0670331)
Prerequisite:	Engineering Geology (0670231)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Soil Mechanics, SI Version, T.W. Lambe and R.V. Whitman, 2008, John Wiley & Sons, New York
References:	Craig's Soil Mechanics, 8th ed., J.A. Knappet & R.F. Craig Engineering Properties of Soils and their Measurements, J.E. Bowles
Course Description:	A study of the formation of soil, grain sizes and types, mineral composition, classification of soils, weight-volume relationships, compaction, permeability and fluid flow through soil, stresses within a soil mass, consolidation and settlement, and shear strength of soils.
Website:	http://www.philadelphia.edu.jo/academics/maliessa/
Instructor:	Dr. Mohammed Mustafa Mahmood Al-Iessa **Email**: maliessa@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 210 – B , Ext: 2690 **Class hours**: Sun, Tues, Thurs: 8:10-9:00 and 10:10-11:00 **Office hours**: Sun, Tues, Thurs: 11:00-15:00 Mon, Wed: 9:00-15:00

Course Outlines:

Week	Topic
1	Introduction to soil mechanics
2 , 3 , 4	Basic characteristics of soils
5 , 6	Classification and Compaction of soils
7 , 8 , 9	Fluid flow through soil
10 , 11 , 12	Stresses within a soil mass
13 , 14	Shear strength of soils
15	Introduction to Consolidation and settlement

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the origin of soil grains, types, sizes and their classification	1 , 6
2.	Understand and calculate the basic properties of soil.	1 , 2
3.	Understand and calculate the fluid flow through soil (1-D)	1 , 2 , 6
4.	Understand the mechanism of stress distribution (geostatic and external) within a soil mass	1 , 2 , 6
5.	Understand the principal stresses and the shear strength within a soil mass and be able to calculate the shear strength of a soil	1 , 2 , 6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Environmental Engineering (0670343)
Prerequisite:	General Chemistry (0212101)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	"Introduction to Environmental Engineering, Mackenzie Davis and David Cornwell, McGraw Hill, Fifth Edition, 2013.
References:	Water Supply and Pollution Control, 7th Edition, Warren Viessman & Mark J. Hammer, Pearson Prentice Hall. Waste Management Practice, 2ed edition., John Pichtel, CRC Press Hazardous Waste Management, International Edition 1994, La Grega, P. Buckingham and J. Evans. Mc Graw Hill
Course Description:	To introduce students to Environmental engineering principles and environmental parameters including quantities and units, mass and energy balances, environmental impact assessment, basic water chemical, physical and biological characteristics, water quality & treatment, Unit operation for water treatment, engineering water treatment systems (sedimentation, flocculation-coagulation, filtration and disinfection), air pollution, mathematics of growth, environmental remediation and environmental legislation.
Website:	http://www.philadelphia.edu.jo/academics/myounes/
Instructor:	Dr. Mohammad Younes **Email**: myounes@philadelphia.edu.jo **Office**: Civil Engineering Building, Office No 312 ext: 2357 **Classes hours:** Sun, Tues, Thurs: 9:10-10:00 & 12:10-13:00 & Mon, Wed: 9:45-11:15 ; 12:45-14:15 **Office hours:** Sun, Tues, Thurs: 10:00-11:45 and Mon, Wed: 11:20-12:20

Course Outlines:

Week	Topic
1	Fundamental Concepts and Overview
2,3	Mass and Energy Balances
4, 5,6	water quality parameters and pollution sources
7, 8,9,10,11	Water and waste water treatment technologies (sedimentation, flocculation-coagulation, filtration and disinfection)
12,13,14	Air Pollution and control
15,16	Risk assessment and Environmental issues

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand mass balance and able to develop mass balance expression for contaminants/ materials under different case	[1;2]
2.	Understand water quality parameters and its application to characterize the different water sources	[2;6]
3.	Understand the best available technologies for physical and chemical treatment of drinking water and wastewater.	[1;2;6]
4.	Determine common air pollutants, and their pathways, and the various technologies available for control.	[1;2]
5.	Understand selected contemporary global environmental issues such as environmental impact assessment, climate change and emerging contaminants.	[1;2]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering & Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title: Fluid Mechanics (**0670381**)

Prerequisite: **0670211**

Credit Hours: 3 credit hours (16 weeks per semester, approximately 44 contact hours)

Textbook: Fluid Mechanics; Russell C. Hibbeler, Pearson, 2014

References:

- Fundamentals of Hydraulic Engineering Systems (4th Edition) Robert J. Houghtalen, Robert J. Houghtalen, A. Osman H. Akan & Ned H. C. Hwang, Pearson, 2010, 4th Edition
- Engineering fluid mechanics, Roberson J.A., and Crowe C.T, John Wiley and sons., (9th Edition).

Course Description: This course is designed for civil engineering students in their third year. The course intends to give students a comprehensive idea about the fluid prosperities, basic units. Fluid statics, pressure and its measurements, force on plane and curved submerged surface, floatation. Fluid in motion, flow kinematics and visualization, Control volume approach, differential and integral continuity equation, pressure variation in flowing fluids, Euler's and Bernoulli's equations, application of Bernoulli equation, momentum principle and its applications.

Website: http://www.philadelphia.edu.jo/academics/aodeibat

Instructor: Eng. Abdallah Odeibat
Email: aodeibat@philadelphia.edu.jo
Office: Civil Engineering building, room 61-215
Office hours: Sun, Tues, Thurs: 11:00-12:00 &13.00-14:00 and Mon, Wed: 8:15 -9:45 & 11:15-12:45

Course Outlines:

Week	Topic
1	Introduction, fluid definitions and its various
2&3	Principle of fluid static
4&5	Flow concepts and conservation of mass principle
6,7&8	Pressure variation and Bernoulli's equation
9,10&11	Momentum principle
12&13	Energy principle
14	Dimensional analysis
15	Flow concepts and conservation of mass principle

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to solve specific engineering problems related with fluid static	[1,2]
2.	Be able to develop methods to solve an engineering problem	[6]
3.	Have the ability to read and understand fluid mechanics problems	[2 , 6]
4.	Understand the basics of fluid mechanics at rest	[1]
5.	Understand the concept of fluid in motion and have the ability to solve problems	[1 , 2]
6.	Understand sorting and searching algorithms	[1]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-4) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Information

Title: **Reinforced Concrete 1 (0670411)**
Sun, Tue, Thu 11:10-12:00

Prerequisite: Structures 2 (0670312)

Credit Hours: 3 credit hours (15 weeks per semester, approximately 45 contact hours)

Textbook: Nilson, A.H.,Darwin, D., and Dolan, C.W. (2013). "Design of Concrete Structures", 14th edition , McGraw Hill, 2009

References:

- ACI Code (ACI 318 M -11).
- Design of Reinforced Concrete by J. C. McCormac and R.H. Brown, 8th Edition, John Wiley & Sons.

Course Description: Properties of concrete and reinforcing steel, allowable stress design, cracked and untracked sections, strength design, stress block, singly and doubly reinforced sections, rectangular sections, T-sections and other shapes, design for bending, shear design, bond requirements, development length, one-way and ribbed slabs, approximate methods for two-way slabs, short columns.

Website: http://www.philadelphia.edu.jo/academics/

Instructor: **Dr. Mais Aldwaik**
Email: Aldwaik.1@osu.edu
Office: Civil engineering building, room 318
Office hours: Sun, Tues, Thurs: 12:00-1:00
Mon, Wed: 8:15-9:45, 11:15—12:15

Course Outline

Week	Topic
1,2	Introduction, Reinforced concrete and building codes
3	Loading, cracked and uncracked behavior, stress block
4,5	Flexural analysis and design of reinforced concrete beams, single reinforced, double reinforced, T-beams
6	Serviceability
7,8,9	Shear and diagonal tension in beams
10,11	Analysis and design of one-way slabs
12,13	Analysis and design of two-way slabs
14,15	Short Columns

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, student should:

1.	Understand design sequence and process for RC structures.	1,2
2.	Learn how to use and apply building codes.	7
3.	Establish a clear understanding of the mechanical behaviors of reinforcing steel, concrete and reinforced concrete members.	2,7
4.	Understand the flexural behavior of reinforced concrete beams, investigate and design beams for bending and shear.	2,7
5.	Analyze slabs dimensions and loading to determine the appropriate design method.	2,7
6.	Differentiate between different loading types for columns, and design them using interaction diagrams.	1,2,7

Assessment Guidance

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 2-3 weeks.

Quizzes: Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual students will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Reinforced Concrete 2 (0670412)
Prerequisite:	Reinforced concrete 1 (0670411)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Design of concrete structures, 15th Edition, A. H. Nilson, D. Darwin, and C. H. Dolan, MCGraw-Hill, 2016.
References:	-Reinforced concrete mechanics and design, 6th Edition, J. K Wight and J. G. Macgregor, Pearson, 2012. -Building Code Requirements for structural concrete (ACI318-14) and Commentary, ACI Committee (318-14), Farmington Hills, MI, 2014, 530 pp.
Course Description:	The course is requirement of the civil engineering students. The student will learn how to check the serviceability requirements of flexural members, how to design the members subjected to Torsion, Combined Shear and torsion. In addition to learn how to calculate the ultimate load on Slender (Long) column. The calculating of factored moment using Direct design method and coefficient ACI code method will be given in this course. Also the student will learn how to design two way slabs, different type of stairs and different type of foundations.
Website:	http://www.philadelphia.edu.jo/academics/aobaidat/
Instructor:	Dr. Ala' Taleb Obaidat **Email**: aobaidat@philadelphia.edu.jo **Office**: Civil engineering building, Room 317, ext: 2692 **Class hours**: Mon, Wed: 11:10-12:00 **Office hours**: Sun, Tues, Thurs: 12:00-13:00 Mon, Wed: 10:00-12:00

Course Outlines:

Week	Topic
1	Ultimate strength versus unified design approaches, tension- and compression-controlled members, strain limits.
2, 3	Serviceability analysis, deflection and cracking control.
4, 5	Analysis and design for torsion.
6, 7	Slender columns.
8, 9	Analysis of building frames, simplifications, and idealization
10, 11, 12	Two-way slabs, direct design method.
13, 14	Two-way slabs, direct design method. Design of stairs
15	Design of Foundations

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Revision of RC.1	[1]
2.	Be able to check the serviceability requirements for beams and one-way slabs. Be able to write computer programs to solve specific engineering problems	[1, 2, 5]
3.	Be able to design members subjected to torsion, and combined shear and torsion.	[1, 2, 5]
4.	Be able to distinguish between sway and nonsway frames, short and long (slender) columns and to magnify the moments in case of long columns.	[1, 4, 5]
5.	Be able to analyze and design reinforced concrete continuous beams and frames subjected to different types of loading (dead, live, wind, seismic,… etc).	[1, 2, 5, 6]
6.	Be able to analyze and design two-way slabs subjected to uniformly distributed loads using the Direct Design Method and the Equivalent Frame Method.	[1, 2, 5]
7.	Be able to analyze and design different types of reinforced concrete staircases.	[1, 2, 4, 5]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual studentwill be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2012/2021

Course Details:

Title:	Steel Structures (0670413)
Prerequisite:	Structural Analysis II
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	1- W.T., Segui, "Steel Design", Cengage Learning, 5th edition, 2012. 2- AISC Steel Construction Manual, 14th edition, 2011.
References:	1. J.C. McCormac, S.F. Csernak, "Structural Steel Design", Pearson, 5th edition, 2011. 2. C.G., Salmon, J.E. Johnson, F.A., Malhas, "Steel Structures Design and Behavior", Prentice Hall, 5th edition, 2009. 3. American Institute of Steel Construction. "Detailing for Steel Construction". AISC/NSD, 3 rd edition, 2009. 4. American Society of Civil Engineers. 2010. "Minimum Design Loads for Buildings and Other Structures". ASCE/SEI 7-10. Reston, VA.
Course Description:	This course covers the fundamental theories and principles of design of simple steel structures using LRFD Method. This course includes design, investigation and detailing of beams, tension and compression members and their connections.
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 215 – B , Ext: 2182 **Office hours**: Sun, Tues, Thurs: 11:00-13:00, and 13:00-14:00 Mon, Wed: 8:15-9:45 and 11:15 -12:45

Course Outlines:

Week	Topic
1	Review and Chapter One: Introduction
2	Chapter Two: Concept in Structural Steel Design
3,4, 5, 6	Chapter Three: Tension Members
7,8, 9, 10	Chapter Four: Compression Members
11,12,13,14	Chapter Five: Beams
15	Chapter Seven: Simple Connections
16	Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be familiar with the AISC Steel Construction Manual	7
2.	understand the concepts of structural design by the Load and Resistance Factor Design method and the Allowable Stress Design method, and will understand the differences between the methods	1,2,7

3.	Analyze and design steel tension members	2,7
4.	And analyze and design steel compression members	2,7
5.	Analyze and design steel beams	2,7
6.	design structural steel simple connections using bolting or welding.	2,7

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam, and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Steel Design (0670414)
Prerequisite:	Structural Analysis II
Credit Hours:	2 credit hours (15 weeks per semester, approximately 30 contact hours)
Textbook:	1- W.T., Segui, "Steel Design", Cengage Learning, 5th edition, 2012. 2- AISC Steel Construction Manual, 14th edition, 2011.
References:	1. J.C. McCormac, S.F. Csernak, "Structural Steel Design", Pearson, 5th edition, 2011. 2. C.G., Salmon, J.E. Johnson, F.A., Malhas, "Steel Structures Design and Behavior", Prentice Hall, 5th edition, 2009. 3. American Institute of Steel Construction. "Detailing for Steel Construction". AISC/NSD, 3 rd edition, 2009. 4. American Society of Civil Engineers. 2010. "Minimum Design Loads for Buildings and Other Structures". ASCE/SEI 7-10. Reston, VA.
Course Description:	This course covers the fundamental theories and principles of design of simple steel structures using LRFD Method. This course includes design, investigation and detailing of beams, tension and compression members and their connections.
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 215, Ext: 2182 **Office hours**: Sun, Tues, Thurs: 11:00-12:00 and 13:00-14:00 Mon, Wed: 8:15-9:45 and 11:15 -12:45

Course Outlines:

Week	Topic
1	Review and Chapter One: Introduction
2,3	Chapter Two: Concept in Structural Steel Design
4, 5, 6,7	Chapter Three: Tension Members
8, 9, 10,11	Chapter Four: Compression Members
12,13,14,15	Chapter Five: Beams
16	Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be familiar with the AISC Steel Construction Manual	7
2.	understand the concepts of structural design by the Load and Resistance Factor Design method and the Allowable Stress Design method, and will understand the differences between the methods	1,2,7

3.	Analyze and design steel tension members	2,7
4.	And analyze and design steel compression members	2,7
5.	Analyze and design steel beams	2,7
6.	Design structural steel simple connections using bolting or welding.	2,7

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam, and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 30 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Information

Title: **Steel and Concrete Structures (0670416)**
Mon, Wed 9:45-11:15

Prerequisite: Structural Mechanics and Analysis (0670315)

Credit Hours: 3 credit hours (15 weeks per semester, approximately 45 contact hours)

Textbook: Nilson, A.H.,Darwin, D., and Dolan, C.W. (2013). "Design of Concrete Structures", 14th edition , McGraw Hill, 2009

References:

- ACI Code (ACI 318 M -11).
- Design of Reinforced Concrete by J. C. McCormac and R.H. Brown, 8th Edition, John Wiley & Sons.

Course Description: Basic concepts of ultimate strength design method, behavior of ductile and brittle modes of failure of reinforced concrete sections under bending, analysis of reinforced concrete sections under bending, design of reinforced concrete sections under bending ,reinforcement layout and detailing, introduction shear behavior of reinforced concrete sections, design for shear reinforcement, analysis and design of reinforced concrete solid slab and ribbed slab, analysis and design of short columns under axial and bending, analyze steel and its structural properties, design of tension members, design of compression members.

Website: http://www.philadelphia.edu.jo/academics/

Instructor: **Dr. Mais Aldwaik**
Email: Aldwaik.1@osu.edu
Office: Civil engineering building, room 318
Office hours: Sun, Tues, Thurs: 12:00-1:00
Mon, Wed: 8:15-9:45, 11:15—12:15

Course Outline

Week	Topic
1,2	Introduction, Reinforced concrete and building codes
3,4	Loading, cracked and uncracked behavior, stress block
5,6,7,8	Flexural analysis and design of reinforced concrete beams, Analysis and design of one-way slabs
9,10,11	Shear and diagonal tension in beams
12,13,14	Short Columns
15,16	Introduction to steel-materials, Design of tension members, Design of Compression members

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, student should:

1.	Understand design sequence and process for RC structures.	1,2
2.	Learn how to use and apply building codes.	7
3.	Establish an understanding of the mechanical behaviors of reinforcement steel, concrete and reinforced concrete members, and steel members.	2,7
4.	Understand the flexural behavior of reinforced concrete beams, investigate and design beams and slabs for bending and shear.	2,7
5.	Understand the basic principles to apply the ACI and AISC provisions	2,7
6.	Understand the compression and tension behavior of steel members	1,2,7

Assessment Guidance

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 2-3 weeks.

Quizzes: Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual students will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University
Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Transportation and Traffic Engineering (0670421)
Prerequisite:	Geometric Design (0670324)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	"Traffic and Highway Engineering", Forth Edition, Nicholas J. Garber, Laster A. Hoel, 2009.
References:	Highway Capacity Manual 2000, HCM, Transportation Research Board, National Research Council.
Course Description:	Concepts, fundamental parameters of traffic (Speed, volumes, density, time headway, gap and follow-up time and examples), fundamental of transportation (car following theory, queuing theory), capacities and level of service (multilane highways, unsignalized intersections, signalized intersections, roundabouts, pedestrians facilities) .
Website:	http://www.philadelphia.edu.jo/academics/aassouli/
Instructor:	Eng. Amany Abdullah Ali Assouli **Email: aassouli@philadelphia.edu.jo or eng.amanyassouli90@yahoo.com** **Office**: Civil Engineering Building, Room 210 – E , Ext: 2513 **Class hours:** Mon, Wed: 9:45-11:15 **Office hours:** Sun, Tues, Thurs:10:10-11:00 Mon, Wed: 11:15-12:45

Course Outlines:

Week	Topic
1,2	Fundamental parameters of traffic
3.4	Introduction to queuing theory
5	Highway Capacity & level of service
6, 7, 8	- Two lane highway -Multilane highways -Freeway
9,10	Unsignalized intersections Roundabouts
11,12	Signalized intersections
13,14	Traffic Studies
15	Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understanding of choosing the best transportation planning	[1, 2, 6]
2.	Understanding transportation models	[1, 2, 4 , 6]
3.	Understanding fundamental parameters of traffic flow	[1, 2, 6]
4.	Understanding capacities and level of services of various road elements	[1, 2 ,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University
Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Transportation and Traffic Engineering (0670422)
Prerequisite:	Geometric Design (0670324)
Credit Hours:	2 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	"Traffic and Highway Engineering", Forth Edition, Nicholas J. Garber, Laster A. Hoel, 2009.
References:	Highway Capacity Manual 2000, HCM, Transportation Research Board, National Research Council.
Course Description:	Concepts, fundamental parameters of traffic (Speed, volumes, density, time headway, gap and follow-up time and examples), fundamental of transportation (car following theory, queuing theory), capacities and level of service (multilane highways, unsignalized intersections, signalized intersections, roundabouts, pedestrians facilities) .
Website:	http://www.philadelphia.edu.jo/academics/aassouli/
Instructor:	Eng. Amany Abdullah Ali Assouli **Email: aassouli@philadelphia.edu.jo or eng.amanyassouli90@yahoo.com** **Office**: Civil Engineering Building, Room 210 – E , Ext: 2513 **Class hours:** Mon, Wed: 9:45-11:15 **Office hours:** Sun, Tues, Thurs:10:10-11:00 Mon, Wed: 11:15-12:45

Course Outlines:

Week	Topic
1,2	Fundamental parameters of traffic
3.4	Introduction to queuing theory
5	Highway Capacity & level of service
6, 7, 8	- Two lane highway -Multilane highways -Freeway
9,10	Unsignalized intersections Roundabouts
11,12	Signalized intersections
13,14	Traffic Studies
15	Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understanding of choosing the best transportation planning	[1, 2, 6]
2.	Understanding transportation models	[1, 2, 4 , 6]
3.	Understanding fundamental parameters of traffic flow	[1, 2, 6]
4.	Understanding capacities and level of services of various road elements	[1, 2 ,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering & Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title: Hydraulics (0670441)

Prerequisite: Fluid Mechanics 760381

Credit Hours: 3 credit hours (15 weeks per semester, approximately 44 contact hours)

Textbook:

• Fundamentals of Hydraulic Engineering Systems, Hwang & Houghtalen. ,4th Edit ion, Prentice Hall, 2006.

References:

• Civil Engineering Hydraulics, by R. E. Featherstone & C. Nalluri, 3rd Edition, 1995.
• Fluid Mechanics, Douglas, Swaffield and Gasiorek. 4th Edition, 2001.
• Water Distribution Modeling, Walsky, Chase and Slavic. 1st Edition, 2001
• Roberson, J.A., Cassidy J.J., Chaudhry, M.H., Hydraulic Engineering, 2nd edition, John Wiley & sons, inc.,1997.

Course Description:

Flow in pipes, Pipes Networks Analysis, Open Channel Fundamentals, Open Channel Flow Analysis, Classification ion o f Flow,(Uniform Flow), Critical Flow (Supercritical, Subcritical), Gradually Varied Flow, Water Surface Profile Analysis, Rapid Varied Flow (Hydraulic Jump), Similitude in Engineering, Pumps, Turbines.

Website: http://www.philadelphia.edu.jo/academics/aodeibat

Instructor:

Eng. Abdallah Odeibat
Email: aodeibat@philadelphia.edu.jo
Office: Civil Engineering building, room 61-215, ext: 2182
Office hours: Sun, Tues, Thurs: 11:00-12:00 &13:00-14:00 and Mon, Wed: 8:15 -9:45 & 11:15 – 12:45.

Course Outlines:

Weeks	TOPIC	READING
1 ,2,3	Introduction (revision) Units and dimension, review of fluid mechanics	Chapter (1,2)
4,5,6,7	Water Flow in Pipes Description of Pipe Flow, Continuity Equation, Forces, In Pipe Flow, Energy Loss Due to Friction, Empirical Formulas for Friction Head, Local (Minor) Losses.	Chapter (3)
8,9,10,11	Pipelines and pipe networks Pipelines connecting two reservoirs, pipelines with negative pressure or pumps, branching pipe systems, pipe networks, water hammer, surge Tanks.	Chapter (4)

12,13,14,15	Water pumps & open channel flow Centrifugal, propeller and jet pumps, pump selection, pumps in parallel or in series, specific speed and pump similarity.	Chapter (5,6)

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to solve specific engineering problems related with Hydraulics	[1, 6]
2.	Be able to develop methods to solve an engineering problem like network	[1 , 2]
3.	Have the ability to read and understand pumps problems	[1 , 6]
4.	Understand the basics of Bernoulli's theorem	[1 , 7]
5.	Understand the concept of open channel and closed channel	[1 , 2 , 6]
6.	Understand Hydraulic jump	[1]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Sanitary Engineering (0670443)
Prerequisite:	Environmental Engineering (0670343)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	"Water and Wastewater Technology, 6th Edition, Mark J. Hammer & Mark J. Hammer Jr., Prentice Hall, 2007.
References:	Water Supply and Pollution Control, 7th Edition, Warren Viessman & Mark J. Hammer, Pearson Prentice Hall. Wastewater Engineering, Treatment and reuse, Metcalf and Eddy, McGraw-Hill Education, 2003
Course Description:	Sources of water , Population estimation, water demand and type of waste water, hydraulic of sewage systems and design principles, water distribution systems, sewer water collection system design and principles. biological and chemical wastewater quality. Unit operations and processes. Basics in water and wastewater engineering design. Wastewater generation and collection. Biological wastewater treatment and reuse including activated sludge.
Website:	http://www.philadelphia.edu.jo/academics/myounes/
Instructor:	Dr. Mohammad Younes **Email**: myounes@philadelphia.edu.jo **Office**: Civil Engineering Building, Office No 312 ext: 2357 **Classes hours:** Sun, Tues, Thurs: 9:10-10:00 & 12:10-13:00 & Mon, Wed: 9:45-11:15 ; 12:45-14:15 **Office hours:** Sun, Tues, Thurs: 10:00-11:45 and Mon, Wed: 11:20-12:20

Course Outlines:

Week	Topic
1	Fundamental Concepts and Overview
2,3	Water demand and population forecast
4, 5,6	Water distribution
7, 8,9,10	wastewater generation and collection
11,12	WasteWater treatment (physical and chemical)
13,14,15,16	Biological wastewater treatment process and concepts

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Determine up to dated knowledge of water quality parameters and its application in water and wastewater treatment.	[1;2]
2.	Understand the main concepts of water engineering design .	[1;2]
3.	Determine the basic requirement for waste water management and collection system design.	[1;2]
4.	Understand the best available technologies for physical, chemical and biological treatment of wastewater	[1;2]
5.	Determine common water pollutants, and their pathways, and the various technologies available for waste water control	[1;7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Economy (0670472)
Prerequisite:	Course prerequisite(s): (0210106)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Engineering Economy, by Leland T. Blank and Anthony J. Tarquin, WCB/McGraw-Hill, 6th Edition, 2005
References:	Construction Accounting and Financial Management, by Steven J. Peterson, Second Edition.
Course Description:	This course is designed for civil engineering students in their second year. The course intends to introduce the aspects on Engineering Economy. Concepts of Construction Account and Financial Ratios, Time value of money. Simple and compound interest. Decision making among alternatives and evaluation of public projects. Inflation and depreciation calculations. Cost of owning and operating equipment. Breakeven, Minimum Cost life, and replacement analysis. .
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Dr. Ala'a Alshdiefat** **Email: aalshdiefat@philadelpia.edu.jo** **Office: Civil engineering building, room, 312 ext. 2436**
	Office hours: **Office hours: Sun, Tue and Thu: 10:00-11:00, 12:00-13:00** **Mon and Wed 11:15-12:45**

Course Outlines:

Week	Topic
1	The Principles of Engineering Economy. The Role of Engineering Economy
2	The Process of Decision Making, Cash Flow, Using Time Lines, Time Value Money, Compounding and Future Value.
3	Discounting and Present Value, Annual Percentage Rate (APR) Making Interest Rates Comparable, Impact of Interest Rates on PV, Comparing Loans using EAR
4, 5	Discounting and Present Value, Annual Percentage Rate (APR) Making Interest Rates Comparable, Impact of Interest Rates on PV, Comparing Loans using EAR
6, 7, 8	Uniform-Series Present-Worth Factor, Uniform-Series Capital-Recovery Factor, Complex Cash Flows. Uniform (arithmetic) gradient cash flows
9, 10, 11	Inflation And Constant Dollar, Simple Loans, Long-Term Loans. Depreciation, Straight-Line Method, Sum-Of-The-Years Analysis Of Financial Statements
12, 13	Tools For Making, Financial Decisions, Net Present Value Or Present Worth, Incremental Net Present Value

14	Tools for Making, Financial Decisions, FUTURE WORTH, ANNUAL EQUIVALENT
15	Tools For Making, Financial Decisions, Rate Of Return, Incremental Rate Of Return. Payback Period Without Interest, And Project Balance
16	Review, and final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1	Understand the concepts of engineering economic analysis and its role in solving problems.	1, 2, 4, 6
2	Understand and apply the appropriate engineering economics analysis method(s) for problem solving: present worth, annual cost, rate-of-return, payback, break-even, benefit-cost ratio.	1, 2, 4, 6
3	Apply all mathematical approach models covered in solving engineering economics problems: mathematical formulas, interest factors from tables, Excel functions and graphs.	1, 2, 4, 6
4	Learn and appreciate how money is used and invested.	1, 2, 4, 6
5	Learn about rational decision making, principles of economic analysis methods and techniques	1, 2, 4, 6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: (3-5) Assignments will be given throughout the semester

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual studentwill be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	10%
Quizzes and participation	10%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Training (0670499)
Prerequisite:	completion of 115 credit hours
Credit Hours:	3 credit hours
Course Description:	Field training which the civil engineering students should undergo in reputable factories or companies in the private or public sectors. The training is for a period of eight consecutive weeks (280 hr).
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil Engineering building, room 61-215, ext: 2182 **Office hours**: Sun, Tues, Thurs: 11:00-12:00 &13:00-14:00 and Mon, Wed: 8:15 -9:45 & 11:15 – 12:45.

Course Outlines:

Period	Topic
Before training	Select a company for training and contact training supervisor in the department to write a formal letter to the company to solicit training opportunity
First week of training	Register with human resources in the company to start training and to receive orientation and assigned with training tasks and duties
During training	Perform training tasks and duties
Last week of training	Human resources or engineering supervisor in the company fill out the student evaluation form
After training	Student registers for the engineering training course in the semester that follows his/her training and prepares a report to be discussed with the training supervisor.

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Have hands-on experience in a related field so that they can relate and reinforce what has been taught at the department.	
2.	Have been exposed to the real working environment and get acquainted with the company/factory structure and engineering operations and functions.	
3.	Be trained to plan and carry out tasks and projects over a period of time, alone and in team and can evaluate the work.	
4.	Develop skills to communicate and cooperate with supervisors and colleagues	

Assessment Guidance:

Evaluation of the student performance during the field training will be conducted according to the following activities:

Evaluation Form	To be filled out, signed, and stamped by the supervisor or human resources.
Report	The report should describe in details the duties assigned and completed by the student as well as any machines or software used in the work field.
Discussion	The student should discuss with the supervisor the report that has been written.

Grading policy:

Passed/Failed

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Prestressed Concrete Design (0670517)
Prerequisite:	Reinforced Concrete Design II
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook and Design Code:	1- PCI design handbook of "Precast and Prestressed Concrete" (7th Edition), 2010. 2- Nawy, Edward "Prestressed Concrete: A Fundamental Approach" (5th Edition), Prentice Hall, 2009.
References:	1. Naaman, A.E. "Prestressed Concrete Analysis and Design: Fundamentals" (2nd Edition), Techno Press 3000, 2004. 2. Nilson, A.H. "Design of Prestressed Concrete" (2nd Edition), Wiley, 1987.
Course Description:	This course covers the fundamental theories and principles of prestressed concrete members. This course includes: design, investigation of beams, columns.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil Engineering Building, Room 315 **Class hours**: Sun, Tues, Thurs: 10:10-11:10 **Office hours**: Sun, Tues, Thurs: 11:10-12:10 and Mon, Wed: 9:45-11:15

Course Outlines:

Week	Topic
1	Basic Concepts.
2	Materials and System for Prestressing.
3, 4, 5, 6	Loss of Prestress.
7, 8, 9, 10	Flexural Analysis and Design at ultimate.
11, 12, 13, 14	Shear Strength Design.
15	Compression Members.
16	Final Exam.

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be familiar with the prestressing methods	[1, 6, 7]
2.	Understand the fundamental structural behavior, analysis and design of prestressed concrete members subjected to a variety of loading conditions. Prestressed concrete is essentially reinforced concrete in which steel reinforcement is tensioned against the concrete, thereby introducing compression in concrete and hence overcoming the tensile weakness of concrete relative to its compressive strength.	[1, 6, 7]
3.	Analyze and design prestressed concrete beams at release, service and ultimate.	[1, 6, 7]
4.	Calculate prestressing loss.	[1, 6, 7]
5.	Analyze and design prestressed concrete beams for shear	[1, 6, 7]
6.	Analyze and design prestressed concrete columns	[1, 6, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: 3 quizzes of 20 minutes each will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Home assignment will be handed out to the students and should be solved individually. Student may be assigned to a project.
Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Quizzes and participation	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Railway and Airport Engineering (0670522)
Prerequisite:	Transportation and Traffic Engineering (0670421)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	planning and Design of Airports , Fifth edition , Robert Horonjeff, Francis X.Mckeley.William J. Sproule Seth B. Young, 2010
References:	planning and Design of Airports , Fifth edition , Robert Horonjeff, Francis X.Mckeley.William J. Sproule Seth B. Young, 2010
Course Description:	This course is designed for civil engineering students in their fourth year. The course intends to introduce the nature of civil aviation and airports, Aircraft characteristics related to airport deign , runway characteristics and configuration , taxiway and taxi lanes and aprons , Necessity of railways , and classification of railway and system of rail ways .
Website:	http://www.philadelphia.edu.jo/academics/aassouli/
Instructor:	Eng. Amany Abdullah Ali Assouli **Email**: aassouli@philadelphia.edu.jo or eng.amanyassouli90@yahoo.com **Office**: Civil Engineering Building, Room 210 – E , Ext: 2513 **Class hours:** Mon, Wed: 12:45-14:45 **Office hours: :** Sun, Tues, Thurs:10:10-11:00 Mon, Wed: 11:15-12:45

Course Outlines:

Week	Topic
1 , 2	Introduction to transportation system and Nature of civil aviation and airports.
3 , 4	Aircraft characteristics related to airport design and Runway characteristics and configuration
5 , 6	Taxiway and Taxi lanes and Aprons
7 , 8 , 9	Terminal and parking area
10 , 11	Airfield pavement &Capacity and delay
12 , 13	Lightening systems and Marking for airports utilities
14 , 15	Introduction of railway

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Know the Natural of civil aviation	[1, 2, 6]
2.	Determine the Characteristics of aircraft related to airport design.	[1, 2, 6]
3.	Design the pavement and geometric design for the Airport	[1, 2, 6]
4.	Determine the capacity and delay of the Aircrafts	[1, 2, 6]
5.	Determine the lights and marks in the Airports	[1, 2, 6]
6.	Know the railways and the types of them	[1, 2, 6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(5) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	20%
Final Exam	40%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Foundation Engineering (0670531)
Prerequisite:	Soil Mechanics (0670331)
Credit Hours:	3 Credit Hrs (16 weeks per semester, approximately 45 contact hours)
Textbook:	Bowles J.E., "Foundation Analysis and Design" , McGraw-Hill
References:	• Tomlinson M.J., "Foundation Design and Construction", A pitman International Text • Teng W.C., "Foundation Design", Prentice – Hall • Das B.M., "Principles of Foundation Engineering", Cengage Learning
Course Description:	This course will focus on the geotechnical aspects of foundation engineering. The course is designed to provide students with methods of analysis and design for various geotechnical systems. Topics to be covered include: A review of the basic topics of soil mechanics, subsurface investigation, bearing capacity, settlement, and earth retaining structures.
Website:	http://www.philadelphia.edu.jo/academics/maliessa/
Instructor:	Dr. Mohammed Mustafa Mahmood Al-Iessa **Email**: maliessa@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 210 – B , Ext: 2690 **Class hours**: Sun, Tues, Thurs: 8:10-9:00 and 10:10-11:00 **Office hours**: Sun, Tues, Thurs: 11:00-15:00 Mon, Wed: 9:00-15:00

Course Outlines:

Week	Topic
1	Introduction to Foundation Engineering
2 , 3 , 4 , 5	Review of Fundamental Topics
5 , 6 , 7	Soil Site Explorations
8 , 9 , 10 , 11	Lateral earth Pressure
12 , 13 , 14	Bearing Capacity
15	Design of Foundations

Course Learning Outcomes with reference to ABET Student Outcomes:

By the end of this course, students will be expected:

1.	To understand the importance of "Foundation Engineering" in civil engineering.	2
2.	To correlate between "Soil Mechanics" and "Foundation Engineering" topics, and be able to use previous knowledge in Soil Mechanics.	1 , 2 , 3 , 6
3.	To get familiar with soil site investigation and the tools and methods used in determining site soil properties.	1 , 2 , 6
4.	To understand the concepts of lateral earth pressure and its effect on structures and how to design earth retaining structures.	1 , 2
5.	To be able to estimate the bearing capacity of a soil.	1 , 2
6.	To be able to design different types of foundations.	1 , 2

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams:	The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(3) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s). Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20
Second Exam	20
Quizzes	20
Final Exam	40
Total:	100%

Attendance Regulation:

The semester has in total 45 contact hours. Total absence hours from classes and tutorials must not exceed 15% of the total contact hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Hydrology (**0670541)**
Prerequisite:	Hydraulic (**0670441**)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 44 contact hours)
Textbook:	Viessman, W., and Lewis, G., Introduction to Hydrology, 5th edition, Prentice Hall. (ISBN 0- 67-399337-x).
References:	• Engineering Hydrology , Wilson ,E. M. Macmillan,London. 1983 . Hydrology for Engineers. Linsley, R., Kohler, M., Paulhus, JMcGraw Hill. • Hydrology An Introduction , WILFRIED BRUTSAERT, Cambridge University press. 8th edition, 2013 • Water Authority (WAJ): Studies and reports related to Jordan's hydrology.
Course Description:	This course introduces students to the basic components of surface water hydrology including the components of the hydrological cycle as well as other hydrological topics like evapotranspiration, precipitation, interception, run off , stream flow and groundwater flow. it Prepares students to develop engineering solutions to hydrological problems by emphasizing the interlinkages of processes in hydrological cycle. Attention is paid to techniques for the measurement and collection of data on the different components. The course also covers engineering applications in hydrological analysis and design
Website:	https://www.philadelphia.edu.jo/academics/myounes/
Instructor:	Dr. Mohammad Younes **Email**: myounes@philadelphia.edu.jo **Office**: Civil Engineering Building, Office No 312 ext: 2357 **Classes hours:** Sun, Tues, Thurs: 9:10-10:00 & 12:10-13:00 & Mon, Wed: 9:45-11:15 ; 12:45-14:15 **Office hours:** Sun, Tues, Thurs: 10:00-11:45 and Mon, Wed: 11:20-12:20

Course Outlines:

Weeks	TOPIC
1 ,2,3	**INTRODUCTION TO HYDROLOGY, HYDROLOGIC CYCLE , HYDROLOGIC BUDGET .**
4,5,6	**PRECIPITATION.**
7,8,9	**EVAPORATION &TRANSPIRATION . infiltration**
10,11,12,13	**STREAM FLOW, RUNOFF and Hydrograph . Hydrograph Analysis, Unit Hydrograph Theory and its applications, Synthetic Unit Hydrograph**
14,15	**Groundwater hydrology and reservoirs**

Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to identify main components of hydrological processes. Including; precipitation, evaporation, transpiration, infiltration and runoff.	[1, 4]
2.	Be able to analyze rainfall-runoff relationship.	[1 , 2]
3.	Be able to employ the concepts of unit hydrographs.	[1 , 7]
4.	Be able to predict peak flood, using rational method, empirical relations, NRCS method, hydrologic routing.	[1 6]
5.	Be able to outline groundwater movement and general flow equations.	[1 , 2]
6.	Be able to recognize main features of wells' hydraulics.	[1, 7]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
Homework and projects	12%
Quizzes and participation	8%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Project (1) (0670551)
Prerequisite:	Engineering Training
Credit Hours:	1 credit hours (16 weeks per semester)
Textbook:	Guide to Research Projects for Engineering Students: Planning, writing, and presenting by Choon Leong, Carmel L. Heah and Kenneth K. W. Ong, CRC Press
References:	Research Methods for Engineers by David V. Thiel, Cambridge University Press, First Edition
Course Description:	The course is a requirement for level 5 of civil engineering students. It introduces the basic principles and analysis of scientific research and technical report writing
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat Email: aodeibat@philadelphia.edu.jo Office: Civil Engineering Building, Room 213 – B , Ext: 2463 Class hours: as per supervisor Office hours: as per supervisor

Course Outlines:

Week	Topic
1	Suggesting a list of projects by department of civil engineering
2	Students' selection of project from suggested projects
3,4	Definition of scientific research
5,6	Features of scientific research (Originality, Creativity, and added values), fundamentals of literature survey
7, 8,9,10	Basic concepts of engineering design and analysis, prototyping
11,12,13	Format of technical report (dissertation) and contents
14	Submission Project to the Supervisor for Revision
15	Project Discussion
16	Final Representation and Evaluation

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the concept and objectives of scientific research	4
2.	Good awareness of the features of literature survey	4
3.	Know the basic fundamentals of engineering design and analysis and prototyping	1,2,6
4.	Understand the format of technical report	4

5.	Practice technical English writing	6
6.	Be able to deliver presentation using power point	3,5

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Submissions:	The students will be subjected to multi-scheduled submission during the semester.
Collective Participation:	Brain storming and collective discussions will be carried out during any session.
Final Discussion and Submission:	The students will undergo a scheduled final discussion and submission at the end of the semester.

Grading policy:

Midterm evaluation	20%
Final Discussion and Submission	80%
Total:	100%

Attendance Regulation:

The semester has in total 16 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Engineering Project (2) (0670552)
Prerequisite:	Engineering Project (1)
Credit Hours:	2 credit hours (16 weeks per semester)
Textbook:	Guide to Research Projects for Engineering Students: Planning, writing, and presenting by Choon Leong, Carmel L. Heah and Kenneth K. W. Ong, CRC Press
References:	Research Methods for Engineers by David V. Thiel, Cambridge University Press, First Edition
Course Description:	The course is a requirement for level 5 of civil engineering students. It introduces the basic principles and analysis of scientific research and technical report writing
Website:	http://www.philadelphia.edu.jo/academics/aassouli/
Instructor:	Eng. Amany Assouli Email: aassouli@philadelphia.edu.jo Office: Civil Engineering Building, Room 212 – B , Ext: 2589 Class hours: as per supervisor Office hours: as per supervisor

Course Outlines:

Week	Topic
1,2	Research problem definition
3,4	Literature review
5	Write schedule plan
6,7,8	Design of an engineering prototype model
9,10,11	Implementation of the engineering prototype model
12,13	Document the final results and recommendations
14	Format of technical report (dissertation) and contents
15	Project Discussion
16	Final presentation and Evaluation

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the concept and objectives of scientific research.	4
2.	Search for technical information from various resources, such as the library, research and technical literature and the World Wide Web.	4
3.	Be able to formulate engineering problems and develop appropriate solution methods to meet desired needs.	1,2,6
4.	Understand the professional practices in the civil engineering and the impact of engineering solutions to the society.	4
5.	Write scientific report and present their research work .	3,5,6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Midterm Exams:	Held during the 8th week of semester. In this exam the students shall demonstrates the progress in project's implementation. Cheating by copying of others works or solutions is strictly forbidden and punishable by awarding the work with zero mark.
Report	Technical writing and literature review shall be submitted by the week 14th of the semester.
Final Exam	Conducted during the week 15th of the semester. Students shall be ready to defense, demonstrate the scheme modules of the project or both. The achieved results by the project's team and recommendation for further enhancement on the project for future works, also shall be introduced After the Exam, the supervisor shall fill the Evaluation Form of the Engineering Graduation Project (II), duly singed by both the supervisor and the reviewer. Result shall be confirmed by the Department council during the 15th week and interred to the students' registration system.

Grading policy:

Presentation	20%
Report	20%
Final Exam	60%
Total:	100%

Attendance Regulation:

The semester has in total 16 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Information

Title: **Special Topics in Civil Engineering (0670553)**
Sun, Tue, Thu 1:10-2:00

Prerequisite: 120 hours

Credit Hours: 3 credit hours (15 weeks per semester, approximately 45 contact hours)

Textbook: R. C. Hibbler (). "**Mechanics of Materials**", 9th edition.

Nilson, A.H.,Darwin, D., and Dolan, C.W. "**Design of Concrete Structures**", 14th edition.

References:
- ACI Code (ACI 318 M -11).
- Design of Reinforced Concrete by J. C. McCormac and R.H. Brown, 8th Edition, John Wiley & Sons.

Course Description: Advanced mechanics and design of reinforced concrete, which includes: Shear and moment in members, bending deformation, the flexure formula, inelastic bending, reinforced concrete section design, deflection of beams, short columns, Concrete building systems, brackets and corbels design, piles and pile cap design.

Website: http://www.philadelphia.edu.jo/academics/

Instructor: **Dr. Mais Aldwaik**
Email: Aldwaik.1@osu.edu
Office: Civil engineering building, room 318
Office hours: Sun, Tues, Thurs: 12:00-1:00
Mon, Wed: 8:15-9:45, 11:15—12:15

Course Outline

Week	Topic
1,2	Introduction, Shear and moment in members
3,4,5	Bending deformation, the flexure formula, inelastic bending
6,7	Flexural analysis and design of reinforced concrete section
8,9	Deflection of beams
10,11	Short Columns
12	Concrete building systems
13	Bracket and corbel design
14,15	Piles and pile cap design

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, student should:

1.	Understand the behavior of concrete sections under bending	1,2
2.	Learn how apply mechanics principles to reinforced concrete design	1,7
3.	Use different techniques to determine deflection of members	2,7
4.	Understand the flexural behavior of reinforced concrete beams, investigate and design beams for bending and shear.	2,7
5.	Analyze buildings and propose an appropriate structural system	4
6.	Learn how to design advanced reinforced concrete elements	2,7

Assessment Guidance

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 2-3 weeks.

Quizzes: Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date.

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual students will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy

First Exam	20%
Second Exam	20%
Homework and Quizzes	20%
Final Exam	40%
Total:	100%

Attendance Regulation

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Project Management (0670571)
Prerequisite:	Reinforced Concrete 2 (0670412)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Project management for engineering and construction., New York: McGraw - Hill Higher Education
References:	A Guide to the Project Management Body of Knowledge (PMBOK Guide) -Modern Construction Management / Frank Harris and Ronald McCaffer, 6th ed, 2006 Oberlender, G. D., & Oberlender, G. D. (2013, 3rd edition). *Project management for engineering and construction.*, New York: McGraw -Hill Higher Education - PMBOK Guide (Project Management Body of Knowledge) USA-Project Management Institute 5th,ed
Course Description:	Planning, project management concepts, network analysis using arrow techniques network analysis. Overlapping networks, project monitoring, project control, time- cost trade off.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Dr. Ala'a Alshdiefat** **Email: aalshdiefat@philadelpia.edu.jo** **Office: Civil engineering building, room, 312 ext. 2436** **Office hours**: **Office hours: Sun, Tue and Thu: 10:00-11:00, 12:00-13:00** **Mon and Wed 11:15-12:45**

Course Outlines:

Week	Topic
1	Introduction, Define Projects and Project Management , What is PMBOK Guide.
2	Projects in the international business environment
3	Project management.
4	Project Planning.
5,6	Scheduling the project and Gantt chart.
7,8	Network programming using critical path mode (CPM)
9,10	Techniques of Project Planning and control, using the Program Evaluation and Review Technique (PERT).
11,12	Balancing the project.
13,14	Censorship and Finish the project.

15	Project presentation
16	Review & Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Determine the role of project managers.	5
2.	Plan the work: perform WBS, estimate activity duration, and establish relationships among the project activities.	6
3.	Perform network analysis and scheduling calculations.	1,6
4.	Evaluate the project status	1,6
5.	Perform earned value analysis to control schedule and cost variances.	1,6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
projects	15%
Quizzes and participation	5%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2020/2021

Course Details:

Title:	Specifications, Contracts, and Quantity Surveying (0670572)
Prerequisite:	Reinforced Concrete 2 (0670412)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Merritt, F. S., & Ricketts, J. T. (2001). *Building design and construction handbook* (Vol. 13). New York, NY, USA: McGraw-Hill. McMULLAN, J. (2019). *Construction Contract Administration Principles: Guide To Construction Contract Professionals*.
References:	The Jordanian Ministry of Public Works and Housing.(2013). *Jordanian Contract book*. http://www.jcca.org.jo/DataFiles/2017/Files/contractor2010-1013.doc The Jordanian Ministry of Public Works and Housing. *Civil Engineering Specifications for Jordanian Construction Projects Book.*
Course Description:	The course intends to introduce types of contractual procedures, types of contracts, procurement, contract conditions, technical specification for buildings, bills of quantities, pricing and quantity measurement.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Dr. Ala'a Alshdiefat** **Email: aalshdiefat@philadelpia.edu.jo** **Office: Civil engineering building, room, 312 ext. 2436** **Office hours**: **Office hours: Sun, Tue and Thu: 10:00-11:00, 12:00-13:00** **Mon and Wed 11:15-12:45**

Course Outlines:

Week	Topic
1	Introduction, Define construction contracts and specifications, and Introduction to quantify in construction projects.
2	Construction project parties, procurement process, factor effecting on construction contracts
3, 4	Type of construction contracts, fixed price contracts, and cost reimbursable contracts
5, 6	Jordanian construction contracts, general conditions, and special conditions
7, 8	Jordanian specifications for building, reinforcement specifications, reinforcement concrete specifications.
9	Excavation, Fill, concrete works
10	Reinforcement works
11	Blockworks, Plaster works, and painting works

12	Tile works, MEP works
13, 14	Preparing BOQ, Preparing contract documents
15	Project presentation
16	Review & Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Determine the obligations of project's parties	2,4
2.	Understand construction contracts' characteristics and features	6
3	Be familiars with Jordanian construction contracts for construction projects	6
4	Understand specifications in construction projects and be familiar with Jordanian specifications	1
5	Be able to quantify several quantities in construction projects and able to prepare BOQ	1,6

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.

Collective Participation: Brain storming and collective discussions will be carried out during any lecture. Individual student will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

First Exam	20%
Second Exam	20%
projects	15%
Quizzes and participation	5%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.