Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2018/2019

Course Details:

Title:	Engineering Statistics (0670202)
Prerequisite:	Course prerequisite(s): 0210102
Credit Hours:	2 credit hours (16 weeks per semester, approximately 30 contact hours)
Textbook:	Applied Statistics and Probability for Engineers by D. Montgomery and G. Runger 5th edition John Wiley and Sons, Inc, 2011 Applied statistics for engineers and scientists , Devore , Jay L. Farnum , Nicholas R. JT.AUTH.
References:	Elementary statistics, Allan G. Bluman. 8 Th editions.
Course Description:	This course is designed for civil engineering students in their second year. The course intends to introduce Statistical concepts and probability theory with applications to reliability production. Presentation and treatment of data; theory of probabilities; random variables; probability distributions (continuous and discrete); sampling theory; statistical estimation.
Website:	http://www.philadelphia.edu.jo/academics/oaldmour/
Instructor:	**Eng. Othman Aldmour** **Email**: Othman.mm1@gmail.com **Office: Civil engineering building, room, 312 ext.** **Office hours**: **11:10 – 12:00 Sun/ Tues/Th. 11:10 – 12:45 Monday/ Wed.**

Course Outlines:

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

16	Review, and final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand Probability theory	I,KBA,E,
2.	Apply Statistical Analysis to collected data	A,E,IK
3.	Have the ability to read, draw and understand different curves.	A,B,F,H,IK
4.	The ability to use Graphic Presentation of Frequency Distribution	A,B,E,F,H,I
5.	The ability to use the Statistical Analysis by using computer and the ability to use them to simplify problem solving	A,B,G,I
6.	Understand basics of experiments design and analysis	A,B,H,K,F

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 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 2018/2019

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/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: 10:10-11:00 and 12:10-13:00 Mon, Wed: 8:15-9:45 and 11:15-12:45 **Office hours**: Sun, Tues, Thurs: 8:00-10:00 and 11:00-12:00 Mon, Wed: 9:45-11:15 and 12:45 -14:00

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

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 2018/2019

Course Details:

Title:	Strength of Materials(0670212)
Prerequisite:	Statics (0670211)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Mechanics of Materials ,Hibbeler, R, C ,7th Edition ,2008
References:	(Mechanics of Materials), F.P. Beer,E.R.Johnston,J.T.Dawolf, 6th Edition, 2006.
Course Description:	Stress-Strain, Torsion, Mechanical Properties of Materials Shear Force and Bending Moment, Stresses in Beams, Deflection of Beams, Analysis of Stress and Strain , Columns.
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**: Mon, Wed: 9:45-11:15 Sun, Tues, Thurs: 11:10-12:00 **Office hours**:Sun, Tues, Thurs:10:00-11:00 and 12:00-13:00 Mon, Wed: 8:15-9:45 and 12:45 -14:00

Course Outlines:

Week	Topic
1	Introduction- Concept of Stress
2,3	Stress and Strain - Axial Loading
4	Torsion
5 , 6 , 7	Pure Bending
8 , 9	Shearing Stress in Beams and Thin-Walled Members.
10,11,12 , 13	Transformation of Stress and Strain
14 , 15	Deflection of Beams

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	To understand the axial, shear and bearing stresses associated with simple truss design and analysis	[a, e]
2.	To understand normal and shear strains and how they relate to deformation	[a, c]

3.	To understand the difference between applied loads and allowable loads and how to calculate (or apply) factor of safety.	[b , d]
4.	To interpret a stress-strain diagram and understand elastic constants	[b , e]
5.	To understand the stress-strain and load-displacement relationships for axial force members.	[c , k]
6.	To learn to calculate the stresses, strains and angular displacements for torsion members (shafts).	[a,d]
7.	To learn to calculate the stresses, strains and displacements for beams under various loading configurations.	[b,k]
8.	To learn how to calculate the principal stresses, and how they are related to the failure of various materials.	[c,e]

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 beconducted 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 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%
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

First Semester 2018/2019

Course Details:

Title:	Construction Materials (0670214)
Prerequisite:	(0670102)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	1. D. Tayler" Construction of material,1989 2. A.M .Neville and J.J .Brooks;:Concrete Technologe" .
References:	https://www.google.jo/?gfe_rd=cr&ei=zys5WY-KBtSs8wfqj5vQBw#q=structures+and+properties+of+matter 3. Omary; Science of engineering materials ,2009
Course Description:	This course is designed for civil engineering students in their second year, The course intends to give students a comprehensive idea about relationship between structures, properties of matter, general classification of Construction materials, metallic crystalline structure, properties and crystal defects, about the types ,properties and uses of cementations material and aggregates, concrete operations, mixing, handling, compacting of concrete, durability of concrete, admixture, curing and testing of concrete, and brick and brick work.
Website:	http://www.philadelphia.edu.jo/academics/aalfraihat/page.php?id=36
Instructor:	Dr. Ahmad ALFraihat **Email**: **aalfraihat@philadelphia.edu.jo** **Office**: Engineering building, room 318, ext: 2463 **Office hours**: Sun, Tues, Thurs: 10:10-11:00 and Mon, Wed: 11:15-12:45

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	[a, h, k]
2.	To be able to develop solve an engineering problem	[a , e]
3.	To Understand structure and properties of construction materials, structure and properties of cement, aggregate and water	[a , e, k]
4.	To know Operations of mixing ,placing ,curing of concrete ,	[a , b, k]
5.	To design of concrete mixes, and brick work	[a , e]
6.	To understand testing of concrete and determining its properties	[a, b, e k]

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 2018/2019

Course Details:

Title:	Engineering Geology (0670231)
Prerequisite:	250102
Credit Hours:	3 credit hours (16 weeks per semester, approximately 45 contact hours)
Textbook:	Engineering Geology ,Principles and Practice, by David George
References:	Engineering Geology,F G Bell
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.
Website:	http://www.philadelphia.edu.jo
Instructor:	Eng.Adnan Abdelhadi **Email**: adnan_m_abdelhadi@yahoo.com **Office**: Engineering building, room (A301) ext: 2604 **Office hours**: Sun, Tues, Thurs: 9:05-10:05 and Mon, Wed: 9:30 -11:00

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.	Be able to learn the basic of surveying equipment	[a, c, d,]
2.	Recognize and apply trigonometric formulas to solve variety of practical problems	[e, i, k]
3.	Learn value of measurements	[a ,g, k]
4.	Ability to solve most of the surveying problems	[a,b , k]
5.	Analyzing data effectively	[a , c ,k]
6.	Determine and defend results	[a,d]

Assessment Guidance:

Evaluation of the student performance during the semester(Total Final Grade) 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 4 – 5 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will beconducted 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 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 2018/2019

Course Details:

Title:	Surveying (0670261)
Prerequisite:	250102
Credit Hours:	3 credit hours (16 weeks per semester, approximately 45 contact hours)
Textbook:	Elementary surveying. 12th edition Galini and Wolf (USA 2008).
References:	Surveingprincipaleandpractices, 5th edition , Nathenson,Lanzafama and Kissam,USA 2005
Course Description:	The course is a requirement for all Civil Engineering students. It introduces the basic principles of fundamentals of surveying. Principle of surveying , distance measurements (direct , optical and elctronic methods), leveling ; contouring , angle measurements, traverse survey ,coordinate geometry , areas and volumes, setting out horizontal and vertical curves.
Website:	http://www.philadelphia.edu.jo
Instructor:	Eng.Adnan Abdelhadi **Email**: adnan_m_abdelhadi@yahoo.com **Office**: Engineering building, room (A301)ext: 2604 **Office hours**: Sun, Tues, Thurs: 9:05-10:05 and Mon, Wed: 9:30 -11:00

Course Outlines:

Week	Topic
1	Introduction
2	Distance Measurements
3	Angles
4	Directions
5,6,7	Traverse &Applications (Open,Closed,Loop,Link)
8,9	Leveling
10,11	Contouring
12,13	Cross Sections
14,15	Earth Works Computations
16	General Review, and Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to learn the basic of surveying equipment	[a, c, d,]
2.	Recognize and apply trigonometric formulas to solve variety of practical problems	[e, i, k]
3.	Learn value of measurements	[a ,g, k]
4.	Ability to solve most of the surveying problems	[a , k]
5.	Analyzing data effectively	[a , c ,k]
6.	Determine and defend results	[a]

Assessment Guidance:

Evaluation of the student performance during the semester(Total Final Grade) 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 4 – 5 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will beconducted 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 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
First Semester 2018/2019

Course Details:

Title:	Surveying (0670265)
Prerequisite:	250102
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	"***Fundamentals of Surveying***", Third Edition, Milton O. Schmidt, Kam W. Wong.
References:	Elementary surveying . 12th edition Galini and Wolf (USA 2008). Surveying principle and practices, 5th edition , Nathenson, Lanzafama and Kissam,USA 2005
Course Description:	Principle of surveying , distance measurements (direct , optical and elctronic methods), leveling ; contouring , angle measurements, traverse survey ,coordinate geometry , areas and volumes, setting out horizontal and vertical curves.
Website:	http://www.philadelphia.edu.jo/academics/rhussein/
Instructor:	Dr:Ahmad Alfraihat **Email**: aalfraihat@philadelphia.edu.jo **Office**: Civil Engineering building, room 61-318, ex:2643 **Office hours**: Sun. to Thurs.: 13:10-14:10

Course Outlines:

Week	Topic
1	1-Introduction
2	2- distance measurements
3	3- leveling 4- contouring
4	5- profiles and cross sections
5	6- Angles measurements

6	7- Traverse survey
7	8- coordinates geometry 9- areas and volumes
8	FINAL EXAM

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the Principle of surveying	[a, e]
2.	Make maps and lay out feature	[a, e , k]
3.	Run a leveling net work	[a , e, k]
4.	Determine the coordinates of points	[a , k]
5	Use the survey instruments	[a,c , k]
6	Calculate the areas and volumes	[a , e]
7	Run a traverse survey	[a , e]

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 2018/2019

Course Details:

Title:	Structures 1 (0670311)
Prerequisite:	Strength of materials (0670212)
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:	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 210D, ext: 2692 **Office hours**: Sun, Tues, and Thurs: 8:10-9:00, 10:00-11:00 and Mon, Wed: 11:00-12:30.

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
16	Review and final exam

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	[a, e, k]
2.	Develop the skills to analyze the behavior and response of structures to various loads and constraints.	[a, c, e]
3.	Analyze determinate structures (truss, beam and frame) under various loading conditions.	[a, e]
4.	Determine internal loads (axial, shear and moment) in structural members using equilibrium and compatibility equations.	[a ,e, k]
5.	Determine reactions and internal loading in structural elements due to moving (dynamic) loads.	[a ,e, k]
6.	Employ deflection methods for calculation of deflection.	[a, e, k]
7.	Demonstrate progress in problem solving skills and analytical thinking	[a ,c, e, k]
8.	Establish foundation knowledge and skills in preparation for structural design, concrete and steel design.	[a, c, e]

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 2018/2019

Course Details:

Title:	Structures 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, by K. Leet, C. Uang and A. Gilbert, McGraw-Hill, 2010 - Matrix Analysis of Structure, by Aslam Kassimali Second Edition, 2012, Cengage Learning, 2012 - Fundamental of Structural Analysis, by H. West and L. Geschwindner, John Wihley & Sons, Inc., 1993. • Any Structural Analysis Book
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 beams, trusses and frames using the stiffness method • Understanding the concept of the finite element method • Analyzing of real structure problems. • This Course is a pre-requisite of many courses specially: Advance Structural Analysis
Website:	http://www.philadelphia.edu.jo/academics/aobaidat/
Instructor:	Dr. Ala' Taleb Obaidat **Email**: aobaidat@philadelphia.edu.jo **Office**: Civil engineering building, Room 210D, ext: 2692 **Office hours**: Sun, Tues, and Thurs: 8:10-9:00, 10:00-11:00 and Mon, Wed: 11:00-12:30.

Course Outlines:

Week	Topic
1,2	Analysis of Statically Indeterminate Structures by the Force Method
3	Displacement Method of Analysis: Slope-Deflection Equations
3,4	Displacement Method of Analysis: Moment Distribution
5,6	Beams and Frames having Nonprismatic Members
7,8	Truss Analysis using the Stiffness Method
10,11	Beam Analysis using the Stiffness Method
12,13	Plane Frame Analysis using the Stiffness Method
14,15	An Introduction to the Finite Element Method

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	[a, e, k]
2.	Develop the skills to analyze the behavior and response of structures to various loads and constraints.	[a, c, e]
3.	Analyze Indeterminate structures (truss, beam and frame) using force method.	[a, e]
4.	Analyze Indeterminate structures (truss, beam and frame) using displacement methods.	[a ,e, k]
5.	Analyze Indeterminate structures (truss, beam and frame) using stiffness method.	[a ,e, k]
6.	Understanding the stiffness matrix to take an to the Finite Element Method.	[a, e, k]
8.	Establish foundation knowledge and skills in preparation for structural design, concrete and steel design.	[a, c, e]

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 2018/2019

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. It provides them as well, with the knowledge of the mechanics of materials to include the stress and strain, Mechanical properties of materials, Axial load , Torsion, Bending , Transverse Shear, Combined loadings, Stress and strain transformation, Design of beams and Buckling of Columns.
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**: Sun, Tues, Thurs: 14:10-15:00 **Office hours**:Sun, Tues, Thurs:10:00-11:00, 12:00-13:00 and Mon, Wed: 8:15-9:45 ,12:45 -14:00

Course Outlines:

Week	Topic
1 , 2	Introduction (general principles)
3 , 4	Force vectors, Force system resultants
5 , 6	Equilibrium of a particle, Structural Analysis
7 , 8	Internal Loading
9,10	Mechanical properties of materials, stress and strain
11 , 12	Axial load, Torsion, Bending, Transverse Shear
13, 14 , 15	Design of Beams, Buckling of Columns

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.	[a, c, e , k]
2.	To transfer students cognitive and imaginative thinking to visualize the needed structures to hold the different loading systems.	[a, c, e , k]
3.	To upgrade students abilities to distinguish between different structural loadings and their points of weakness.	[a, c, e , k]
4.	To provide students with means to analyze different structures and to choose the bestsystem for their designs.	[a,c, e, k]

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 beconducted 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 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%
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 2018/2019

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/zzaben
Instructor:	Dr Zuhair Al-Zaben **Email**: zzaben@philadelphia.edu.jo **Office**: Civil Engineering building, Room 210-C, ext: **Office hours**: Sun. to Thurs.: 9:00-11:00

Course Outlines:

Week	Topic
1	Introduction
2	Pavement types
3	Ch. 15: Highway Materials-Soils
4	Ch. 15: Highway Materials -Aggregates
5	Ch. 15: Highway Materials -Aggregates
6	Ch.15: Highway Materials - Asphalts
7	Ch. 20 : Bases, Subbases, & Low Cost
8	Ch. 19: Highway Type Bituminous Pavements
9	Ch. 19: Highway Type Bituminous Pavements
10	Ch18: HMA Construction and Placement
11	Ch. 16 and Ch.20: 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).	[a, e ,k]
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).	[a, e , k]
3	Design the thicknesses of the layers composing the highway pavements	[a, e ,k]
4	Providing adequate drainage means and facilities to guard the big investments in roadways from water damages.	[a, e ,k]
5	Methods of designing the hot asphalt mix using Marshal Method.	[a, e ,k]
6	Sources of distresses in the pavements and the methods of repair.	[a, e ,k]

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 2018/2019

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 210 – E , Ext: 2513 **Class hours**: Mon, Wed: 11:15-12:45 & Sun, Tues, Thurs: 8:10-9:00 **Office hours**: Sun, Tues, Thurs:09:10-10:00 . & Mon, Wed: 9:45-11:15

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

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:

Midterm Exam	30%
Quizzes and participation	20%
Final Exam	50%
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 2018/2019

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: 10:10-11:00 and 12:10-13:00 Mon, Wed: 8:15-9:45 and 11:15-12:45 **Office hours**: Sun, Tues, Thurs: 8:00-10:00 and 11:00-12:00 Mon, Wed: 9:45-11:15 and 12:45 -14:00

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	[a, b, e]
2.	Understand and calculate the basic properties of soil.	[a, b, e, h , k]
3.	Understand and calculate the fluid flow through soil (1-D)	[a , b, e]
4.	Understand the mechanism of stress distribution (geostatic and external) within a soil mass	[a, c, e, k]
5.	Understand the principal stresses and the shear strength within a soil mass and be able to calculate the shear strength of a soil	[a , b, c, e, k]
6.	Understand the principles of consolidation theory	[a , b, c, e, k]

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 2018/2019

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 chemistry and microbiology, water quality &treatment, 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, Department Head Office, ext: 2253 **Office hours**: Sun, Tues, Thurs: 11:00-12:00 and Mon, Wed: 9:00-11:00

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	Water and waste water treatment technologies
11,12,13	Air Pollution and control
14,15,16	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	[a, c, e]
2.	Understand water quality parameters and its application to characterize the different water sources	[e , k]
3.	Understand the best available technologies for physical and chemical treatment of drinking water and wastewater.	[a , e]
4.	Determine common air pollutants, and their pathways, and the various technologies available for control.	[a , k]
5.	Understand selected contemporary global environmental issues such as environmental impact assessment, climate change and emerging contaminants.	[f, h, k]

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 2018/2019

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, floation. 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.

Instructor: Dr. Ahmad J. Dabdab
Email: adabdab@philadelphia.edu.jo
Office:Civil Engineering building, room 61-213, ext: 2463
Office hours: Sun, Tues, Thurs: 8:00-10:00 &11.00-12:00 and Mon, Wed: 9:45 -11:15

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

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: (2-3) quizzes of (20-30) 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 2018/2019

Course Details:

Title:	Reinforced Concrete 1 (0670411)
Prerequisite:	Structural analysis 2 (0670312)
Credit Hours:	3 credit hours (16 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:	i. Reinforced Concrete Mechanics and Design, 6th Edition, J. K. Wight and J. G. Macgregor, Pearson, 2012. ii. Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, ACI Committee (318-14), Farmington Hills, MI, 2014, 530 pp.
Course Description:	The course is a requirement for civil engineering students. Students will learn how to analyze and design different types of beams and one-way slabs subjected to moment and or shear and moment. Design of beams and one-way slabs for shear. Analysis and design of short columns. Development and splicing of reinforcement. Approximate design of two-way slabs.
Website:	http://www.philadelphia.edu.jo/academics/staan/
Instructor:	Dr. Saad Al-Taan **Email**: staan@philadelphia.edu.jo **Office**: Engineering building, room 61-212, Ext: 2589 **Office hours**: Sun, Tues, Thurs: 10:00-12:00, and Mon, Wed: 11:30 - 14:00

Course Outlines:

Week	Topic
1	Introduction, Properties of concrete and steel.
2	Design methods and requirements.
3, 4	Elastic analysis of beams, un-cracked and cracked sections.
5, 6	Flexural analysis of beams and one-way slabs using the strength design method.
8, 9	Flexural design of beams and one-way slabs using the strength design method.
10	Approximate method for designing two-way slabs.
11, 12	Design of beams and one-way slabs for shear.
13	Development and splicing of reinforcement.
14, 15	Strength of members subjected to compression and bending: Short columns.
Final Exam.	

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to choose the suitable concrete strength for any type of reinforced concrete member.	[a-h]
2.	Be able to analyze different types of beams and one-way slabs during the working conditions.	[a-e]
3.	Be able to analyze different types of beams and one-way slabs for the ultimate stage.	[a, h]
4.	Be able to design different types of reinforced concrete beams and one-way slabs subjected to many types of ultimate loads.	[e, h-j]
5.	Be able to design two-way slabs supported on rigid supports.	[e-h]
6.	Be able to design beams and one-way slabs subjected to shear forces.	[h-k]
7.	Be able to locate the critical sections for the development of bars under compression or tensile stresses, and to splice the bars in the proper locations.	[a-h]
8.	Be able to design columns subjected to compression and bending moments.	[a-h]

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 lasting 50 minutes, 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: Homeworks 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	7%
Quizzes and participation	13%
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.

September, 2018

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2018/2019

Course Details:

Title:	Reinforced Concrete 2 (0670412)
Prerequisite:	Reinforced Concrete 1 (0670411)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Design of Concrete Structures, 15th Edition, A. H. Nilson, D. Darwin, and C. H. Dolan, McGraw-Hill, 2016.
References:	i. Reinforced Concrete Mechanics and Design, 6th Edition, J. K. Wight and J. G. Macgregor, Pearson, 2012. ii. Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, ACI Committee (318-14), Farmington Hills, MI, 2014, 530 pp.
Course Description:	The course is a requirement for civil engineering students. Students will learn how to check the serviceability requirements of flexural members, and how to design for torsion, combined shear and torsion, long columns, continuous beams, frames, two-way slabs, and different types of staircases.
Website:	http://www.philadelphia.edu.jo/academics/staan/
Instructor:	Dr. Saad Al-Taan **Email**: staan@philadelphia.edu.jo **Office**: Engineering building, room 61-212, Ext: 2589 **Office hours**: Sun, Tues, Thurs: 10:00 -11:00, 12:00 – 13:00 and Mon, Wed: 11:30 - 14:00

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.
15	Design of stairs
Final Exam.	

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

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 lasting 50 minutes, 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: Homeworks 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	7%
Quizzes and participation	13%
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.

September, 2018

Philadelphia University
Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2018/2019

Course Details:

Title:	Steel Design (0670413)
Prerequisite:	Structural Analysis II
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook and Design Code:	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, 3rd 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 and ASD Methods. This course includes: design, investigation and detailing of beams, tension and compression members and their connections.
Website:	http://www.philadelphia.edu.jo/academics/bbehnam/
Instructor:	Dr. Bashar Behnam Email: bbehnam@philadelphia.edu.jo Office: Civil Engineering building, room 312, ext: Class hours: 9:10 to 10:00 AM Sun, Tue & Thu. (Sect. 1) 9:45 to 11:15 AM Mon. & Wed. (Sect. 2)

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,	[a, c, k]
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	[a , k]
3.	Analyze and design steel tension members	[a , e]
4.	And analyze and design steel compression members	[a , e]
5.	Analyze and design steel beams	[a , e]

6.	design structural steel simple connections using bolting or welding.	[a, e]

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.
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.

February, 2018

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2018/2019

Course Details:

Title:	Concrete & Steel Structures (0670416)
Prerequisite:	Structural Mechanics and Analysis (0670315)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Nilson, A.H.,Darwin, D., and Dolan, C.W. (2013). "Design of Concrete Structures", 14th edition , McGraw Hill, 2009
References:	1. ACI Code (ACI 318 M -11). AISC code. 2. 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, understand steel and its structural properties, design of tension members, design of compression members.
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil engineering building, room 213, ext: 2463 **Office hours**: Sun, Tues, Thurs: 10:00-11:00 and 12:00-13:00 Mon, Wed: 8:15-9:45 and 11:15 -12:45

Course Outlines:

Week	Topic
1,2	Introduction, Reinforced concrete and building codes
3,4	Materials, Concrete, Strength of concrete, stress-strain relationship, durability of concrete and reinforcement
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
12,13,1	Short Columns
15,16	Introduction to steel-materials, Design of tension members , Design of Compression members

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Recognize the importance of building codes.	[a, h, j]
2.	Understand the design process.	[c, e]
3.	Establish a clear understanding of the mechanical behaviors of reinforcing steel, concrete and reinforced concrete members, and steel members.	[a, e, k]
4.	Understand the limit states of a reinforced concrete structure and recognize the importance of each limit state.	[a ,c, e]
5.	Understand the basic principles to apply the ACI and AISC provisions.	[a , h]
6.	Understand the flexural behavior of reinforced concrete beams, investigate and design beams for bending and shear.	[a, e, k]
7.	Understand mechanism of bond transfer, development length and anchorage of reinforcement and provide detailing of reinforced concrete beams.	[a, e]
	Understand the compression and tension behavior of steel members.	[a, e, k]

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 subjectedto 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 beconducted 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%
Homeworkand 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 2018/2019

Course Details:

Title:	Transportation and Traffic Engineering (0670421)
Prerequisite:	**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/ahad/page.php
Instructor:	Eng. Adnan Abdelhadi **Email**: adnan_m_abdelhadi@philadelphia.edu.jo **Office**: Civil Engineering building, room A 301, ext:2604 **Office hours**: Sun, Tues, Thurs: 9:05-10:05 and Mon, Wed: 9:30 -11:00

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	[a, e, k]
2.	Understanding transportation models	[a, c,e , k]
3.	Understanding fundamental parameters of traffic flow	[a, e, h, k]
4.	Understanding capacities and level of services of various road elements	[a, c ,h, k]

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 beconducted 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 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 2018/2019

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 Savic. 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, Classificat ion o f Flow,(Uniform Flow), Crit ical Flow (Supercrit ical, Subcrit ical), Gradually Varied Flow, Water Surface Profile Analysis, Rapid Varied Flow (Hydraulic Jump), Similitude in Engineering, Pumps, Turbines.

Instructor:

Dr. Ahmad J. Dabdab
Email: adabdab@philadelphia.edu.jo
Office:Civil Engineering building, room 61-213, ext: 2463
Office hours: Sun, Tues, Thurs: 8:00-10:00 &1100-12:00 and Mon, Wed: 9:45 -11:15

Course Outlines:

Weeks	TOPIC	READING
1 ,2,3	**INTRODUCTION (REVISION)** UNITS AND DIMENSION ,REVIW 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	[a, c, e]
2.	Be able to develop methods to solve an engineering problem like network	[e , k]
3.	Have the ability to read and understand pumps problems	[a , e]
4.	Understand the basics of Bernoulli's theorem	[a , k]
5.	Understand the concept of open channel and closed channel	[a , c , k]
6.	Understand Hydraulic jump	[a]

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 2018/2019

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. Physical, biological and chemical water quality. Water standards and criteria. Unit operations and processes. Basics in water and wastewater engineering design. Wastewater generation and collection. Biological wastewater treatment and reuse including activated sludge. Water treatment design of sedimentation, filtration, coagulation-flocculation and disinfection.
Website:	http://www.philadelphia.edu.jo/academics/myounes/
Instructor:	Dr. Mohammad Younes **Email**: myounes@philadelphia.edu.jo **Office**: Civil Engineering Building, Department Head Office, ext: 2253 **Office hours**: Sun, Tues, Thurs: 11:00-12:00 and Mon, Wed: 9:00-11:00

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	Water 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.	[a, c, e]
2.	Understand the main concepts of water engineering design .	[c,e, k]
3.	Determine the basic requirement for waste water management and collection system design.	[a , e]
4.	Understand the best available technologies for physical, chemical and biological treatment of wastewater	[a , k]
5.	Determine common water pollutants, and their pathways, and the various technologies available for waste water control	[a , c , k]

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 beconducted 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 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	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 2018/2019

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/oaldmour/
Instructor:	**Eng. Othman Aldmour** **Email**: Othman.mm1@gmail.com **Office: Civil engineering building, room, 312 ext.** **Office hours**: **11:10 – 12:00 Sun/ Tues/Th. 11:10 – 12:45 Monday/ Wed.**

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.	Learn and appreciate how money is used and invested.	A,E,H,IJ,
2.	Learn about rational decision making. Learn about Principles of economic analysis methods and techniques	A,E,F,I,K
3.	Select & apply appropriate suitable analysis method for evaluating different types of projects and alternatives	A,E,F,I,K
4.	Learn to apply various interest formulas, and Solve problems using economic analysis based on economic criteria.	A,E,F,I,K
5.	Learn how to apply other analysis techniques in cases of multiple alternatives.	A,E,I,K
6.	Learn how to Reade and analysis Income Statements, and Balance Sheet.	H,K

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 2018/2019

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/bbehnam/
Instructor:	Dr. Bashar Behnam Email: bbehnam@philadelphia.edu.jo Office: Civil Engineering building, room 312, ext: Class hours: 11:10 AM to 12:00 PM Sun. Tue. & Thu.

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	[a, c, k]
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.	[a, k]
3.	Analyze and design prestressed concrete beams at release, service and ultimate.	[a, e]
4.	Calculate prestressing loss.	[a, e]
5.	Analyze and design prestressed concrete beams for shear	[a, e]
6.	Analyze and design prestressed concrete columns	[a, e]

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.
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 2018/2019

Course Details:

Title:	Bridge Design (0670519)
Prerequisite:	Structural Analysis II, Reinforced Concrete Design I
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook	"Bridge Design and Evaluation", 1st Ed., Gongkang Fu, John Wiley & Sons, Inc., 2013.
Design Code:	"American Association of State and Highway Transportation Officials AASHTO, LRFD Bridge Design Specifications", 6th Ed., AASHTO,Washington, DC., 2012
References:	"Design of Highway Bridges an LRFD Approach", 3rd Ed., R.M. Barker and J.A. Puckett, John Wiley & Sons, Inc., 2013 "Bridge Engineering", 3rd Ed., J.J. Zhao and D.E. Tonias, McGraw-Hill Education, 2012
Course Description:	This course covers design of new bridges in accordance with current AASHTO specifications. The procedures and requirements of bridge design will be discussed, and the corresponding AASHTO code provisions will be explained through examples. Main topics include bridge design and procedures, bridge superstructure design, fatigue and fracture of steel bridges.
Website:	http://www.philadelphia.edu.jo/academics/bbehnam/
Instructor:	Dr. Bashar Behnam Email: bbehnam@philadelphia.edu.jo Office: Civil Engineering building, room 312, ext: 12:45 to 2:15 PM Mon. & Wed. (Sect. 1)

Course Outlines:

Week	Topic
1	Introduction to AASHTO LRFD Method
2, 3	Loads, Load Combinations and Limit States
4, 5	Statically Determinate Bridges
6, 7	Design of Concrete Bridge Decks.
8, 9, 10	Structural Analysis: Simplified Analysis (Distribution Factor)
11, 12, 13	Service Limit State
14, 15	Influence Line for Statically Indeterminate 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 AASHTO LRFD Bridge Design Specifications.	[a, c, k]
2.	understand the concepts of structural design by the LRFD method, determine the applied loads and the corresponing load combinations	[a , k]
3.	Be able to analyze and design concrete decks.	[a , e]
4.	Be able to analyze and design steel bridge girders.	[a , e]
5.	Be able to Analyze and design compsoite sections.	[a , e]
6.	Be able to construct influence line for statically indeterminate bridges.	[a, e]

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.
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.

October, 2018

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2018/2019

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: 08:15-09:45 & Sun, Tues, Thurs: 10:10-11:00 **Office hours**: Sun, Tues, Thurs:09:10-10:00 Mon, Wed: 9:45-11:15

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

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:

Midterm Exam	30%
Quizzes and participation	20%
Final Exam	50%
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 2018/2019

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:	Although the practice of foundation engineering requires significant knowledge in the area of structural analysis, concrete and steel design, as well as construction techniques, 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: subsurface investigation, soil improvement, slope stability, bearing capacity, settlement, and design of shallow foundations, deep foundations, and earth retaining structures.
Website:	http://www.philadelphia.edu.jo/academics/fjumaily/
Instructor:	Prof. Dr. Fouad A. Al-Jumaily **Email**: fouad_ecg@yahoo.com **Office**: Civil Engineering Building, Room 61-214 , Ext:2208 **Class hours**: Sun., Tues., Thurs. 10:10-11:00 and 12:10-13:00 **Office hours**: Sun, Tues, Thurs: 9:00 -10:10 and 11:00-12:10

Course Outlines:

Week	Topic
1	Review of some related fundamentals
2 and 3	Earth pressures
4	Foundation settlement
5 and 6	Soil Site Explorations
7and 8	Bearing capacity
9 and 10	Stability of Slopes
11	Soil improvement
12, 13 and 14	Design of shallow foundations
15 and 16	Design of earth retaining structures

Course Learning Outcomes with reference to ABET Student Outcomes:

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

1.	Be able to identify and deals with a foundation problem., develop an understanding of fundamental concepts, in contrast to the formula – driven approach.	[a, c, d ,e, g]
2.	Be able to use the techniques, skills and modern engineering tools necessary for engineering practice, help students build a framework of basic ideas robust and adaptable enough to support and accommodate the more complex problems and analytical procedures that confront the practicing geotechnical engineer.	[e , k]
3.	Have the ability to read and understand existing foundation document, to illustrate, with reference to real case histories, that the sensible application of simple ideas and methods can give perfectly acceptable engineering solutions to many cases of geotechnical problem and avoid the unnecessary use of mathematics,	[a , e]
4.	Have the knowledge of contemporary issues.	[j , k]

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
Quizzes	10
Home works and Project	5
Collective Participation	5
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 2018/2019

Course Details:

Title:	Hydrology (0670541)
Prerequisite:	0212101
Credit Hours:	3 credit hours (15 weeks per semester, approximately 44 contact hours)
Textbook:	Engineering Hydrology E.M.WILSON. Hydrology (principles ,Analysis, Design) by H M Raghunath 3rd edition
References:	• Hydrology and flood plain Analysis, Second- Editions. By Philip B. Bedient and Wayne C. Huber Applied Hydrology by Ven Te Chow.
Course Description:	This course is designed for civil engineering students in their 4th year. The course intends to give students a comprehensive idea about the hydrology. Hydrologic cycle , surface water hydrology ,precipitation, evaporation & transpiration ,stream flow and Surface Runoff, infiltration ,Ø -Index ,W-Index, Hydrograph.
Website:	http://www.philadelphia.edu.jo/academics/ oaldmour /
Instructor:	**Eng. Othman Aldmour** **Email**: Othman.mm1@gmail.com **Office**: Civil Engineering building, Room 312 **Office hours**: Sun, Tues, Thurs: 11:10-12:00 and Mon, Wed: 11:10 -12:10

Course Outlines:

Week	Topic
1,2,3	Introduction to Hydrology ,Hydrologic Cycle, hydrologic Budget
4,5,6	Precipitation
7,8,9	Evaporation and Transpiration
10,11	Stream Flow & Surface Runoff
12,13	Reservoirs
14,15	Ground water

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to find areal rainfall by using three methods	[a, c, e]
2.	Be able to solve problems related with Evaporation and Transpiration	[e , k]
3.	Have the ability to read and understand hydrograph and finding runoff depth	[a , e]
4.	Understand the basics of water budget	[a , k]
5.	Understand the concept of double mass curve	[a , c , k]
6.	Be able to find hydraulic conductivity and discharge in ground water topic	[a]

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	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 2018/2019

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:	A Guide to the Project Management Body of Knowledge (PMBOK Guide) -Modern Construction Management / Frank Harris and Ronald McCaffer, 6th ed, 2006
References:	- PMBOK Guide (Project Management Body of Knowledge) USA-Project Management Institute 5th,ed الدليل المعرفي لادارة المشاريع ،الاصدار الخامس المعهد الامريكي للمقاييس القومية/معهد ادارة المشروعات ٢٠١٤،
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/aissa/
Instructor:	Dr. Atef Issa **Email**: AtefIssa1961@hotmail.com **Office**: Civil Engineering building, room 61315, ext314 **Office hours**: 10:00 – 11:00, Sun /Tue/Thu 12:00—13:00,Mon/Wed

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	Scheduling the project.
6	Network programming using critical path mode (CPM)
7,8	Techniques of Project Planning and control, using the Program Evaluation and Review Technique (PERT).
9,10	Balancing the project.
11	Project Team Management.
12	Conflict management project.
13	Risk Management Project. & Feasibility studies.
14	Feasibility studies.
15	Censorship and Finish the project.
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.	[a, c, e]
2.	Plan the work: perform WBS, estimate activity duration, and establish relationships among the project activities.	[e , k]
3.	Perform network analysis and scheduling calculations.	[a , e]
4.	Optimize the plan: perform time-cost tradeoff	[a , k]
5.	Evaluate the project status	[a , c , k]
6.	Perform earned value analysis to control schedule and cost variances.	[a]
7.	Estimate equipment cost, productivity and production cost	[a, c, e]
8.	Understand Quality management	[a , c , k]
9.	Understand Risk Management	[a]

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 2018/2019

Course Details:

Title:	Specifications, Contracts, and Quantity (0670572)
Prerequisite:	Reinforced Concrete 2 (0670412)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	عاطف عيسى، " العقود والمواصفات وحساب الكميات "
References:	1. Dauglass Douglas D, Gransberg C.M, Clain , Popescu R.C. and Ryan C. " Construction Equipment Management for Engineers, Estimators, and Owners" Taylor and Francis Group , New York , 2006 2. Beal, C. , " Masonry and Concrete " ,McGraw – Hill New York , N.Y., 2001.
Course Description:	This course is designed for civil engineering students in their fifth year. The course intends to introduce types of contractual procedures, types of contracts, contract conditions, technical specification for buildings, bills of quantities, pricing and quantity measurement.
Website:	http://www.philadelphia.edu.jo/academics/aissa/
Instructor:	Dr. Atef Issa **Email**: AtefIssa1961@hotmail.com **Office**: Civil Engineering building, room 61315, ext: 314 **Office hours**: 10:00 – ١2:00,Sun /Tue/Thu 12:00—13:00 Mon / Wed

Course Outlines:

Week	Topic
1,2	Introduction :Technical Specifications, Quantity surveying, Contracts
3,4	Excavation and Fill, Concrete works
5,6	Masonry works, contracts-general principles
7,8	Block work, Plaster work, Types of contracts
9,10	Tile and Marble works, Tendering procedure, Contracts conditions documents
11,12	Joinery work/ Painting , General conditions of contracts
12,13	Plumbing Installations, Bill of quantities and prices
14,15	Dispute resolution, Projects presentation
16	Review & Final Exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Provide an introduction to the role of quantity surveying in within the client's specifications	[a, c, e]
2.	Understand contracts and budgets, quantities and measurements	[e , k]
3.	Understand quantities and measurements	[a , e]
4.	Understand technical specification for buildings	[a , k]
5.	Performing bills of quantities, pricing	[a , c , k]
6.	Being familiar with contractual procedures	[a , c , k]

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.