Philadelphia University

Faculty of Engineering - Department of Civil Engineering
First Semester 2022/2023

Course Details:

Title:	Transportation and Traffic Engineering (0670421)
Prerequisite:	**Highway geometric design 0670324**
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	"***Traffic and Highway Engineering***", Forth Edition, Nicholas J. Garber, Laster A. Hoel, 2009.
References:	Highway Capacity Manual 2000, **HCM**, Transportation Research Board, National Research Council.
Course Description:	Concepts, fundamental parameters of traffic (Speed, volumes, density, time headway, gap and follow-up time and examples), fundamental of transportation (car following theory, queuing theory), capacities and level of service (multilane highways, unsignalized intersections, signalized intersections, roundabouts, pedestrians facilities) .
Website:	http://www.philadelphia.edu.jo/academics/ahad/page.php
Instructor:	Eng. Adnan Abdelhadi Email: adnan_m_abdelhadi@philadelphia.edu.jo Office hours: Sun,& Tue,:8:15- 9: 45 & 11:15 – 12:45 Mon. & Wed:8:15 -9:45 , 12:45 – 2:15

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

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

Quizzes: (3-5) 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:

Mid Term Exam	30%
Quizzes and Homework	30%
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.

Oct, 2022

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2022/2023

Course Details:

Title:	Statics (0670211)
Prerequisite:	Calculus II (0250102)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	Engineering Mechanics – Statics, SI Edition, 13th edition, Vol. 1, R. C. Hibbeler and Kai Beng Yap, PEARSON, 2013
References:	Engineering Mechanics – Statics, 7th edition, Vol. 1, J. L. Meriam and L.G. Kraige, John Wiley and Sons, 2012 Engineering Mechanics – Statics, 3rd edition, A. Pytel and J. Kiusalaas, Cengage Learning, 2010.
Course Description:	The main purpose of this course is to provide the student with a clear view of the theory and applications of engineering mechanics. This includes the force vector, force system resultants, free body diagram of forces and equilibrium of particles and rigid bodies, moment of a force about a point and about an axis, equilibrium of rigid bodies, analysis of trusses and frames, shear forces and bending moment diagrams, center of area and moment of inertia of a composite area.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil Engineering Building, Room 315 **Class hours**: Sun, Tues: 11:15- 12:45 **Classroom:** 61202 **Office hours**: Sun, Tues: 9:45 - 11:15 Mon, Wed: 8:15 - 9:45

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams:	The students will be subjected to one scheduled midterm exam during the semester. This exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(2-4) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Homework and projects:	Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark.
Collective Participation:	Brainstorming 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%
Semester works	30%
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 2022/2023

Course Information

Title: **Strength of Materials (670212)**

Prerequisite: Dynamics (620212)

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

Textbook: Mechanics of Materials -10th edition by R. C. Hibbeler

References: Strength of Materials- Elementary Theory and Problems- Part I- 2nd edition by S. Timoshenko

Description: The course introduces concepts of stress and strain, properties of materials, axial loading, torsion, pure bending, analysis and design of beam for bending, shear stress in beams, transformation of stress and strain, deflection of beams, columns, and energy methods.

Instructor: **Dr. Mais Aldwaik**
Email: maldwaik@philadelphia.edu.jo
Office: Civil engineering building, room 214
Office hours: Sun, Tue, Thu: 11:15-12:45
Mon, Wed: 9:45-11:15

Course Outline:

Week	Topic
1	Introduction and Basic Concepts of Solid Mechanics
2	Stress and strain
3	Mechanical properties of materials (quiz, HW)
4	Axial Loading
5	Torsion (quiz, HW)
6	analysis and design of beam for bending
7,8	. shear stress in beams (Midterm)
9	Transverse shear
10	Strain transformation (quiz, HW)
11, 12	Stress transformation (Project)
13, 14	Deflection of beams (quiz, HW)
15	Columns, energy methods

Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should be able to:

1.	Understand the basic concepts of solid mechanics, stress and strain.	1, 7
2.	Define the mechanical properties of materials.	1, 7
3.	Perform analysis and design of beam for bending, Axial loading, and torsion	1, 2, 7
4.	Determine Shear stress in beams.	1, 2, 7
5.	Calculate deflection of beams under various loading and support conditions.	2, 4, 7

Assessment Guidance

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

Exams: Students will be subjected one midterm exam during the semester.

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

Homework: One-three homeworks will be assigned during the semester. You are usually given one week to submit each home work. 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.

Projects: One course project will be required by the end of the semester. Microsoft Excel will be used for the project.

Final Exam: 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%
Home works, Quizzes, and Projects	30%
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 2022/2023

Course Details:

Title:	Construction Materials (0670214)
Prerequisite:	Calculus II (0250102)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	A. M. Neville, and J.J Brooks, Concrete Technology, Second Edition-2010, Prentice Hall
References:	A. M. Neville, Properties of Concrete, Fifth Edition-2011.
Course Description:	This course will provide an advanced understanding of cement chemistry, hydration reaction of Portland cement, chemical and physical interaction of aggregates and admixtures with the hydrated cement paste and their effects on the performance of fresh and hardened concrete. Concrete durability problems. Quality of water. Concrete mixing, handling, compacting, and curing of concrete. Testing of concrete. Concrete mix design.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil engineering building, Room 315 **Class hours**: Mon, Wed: 9:45 - 11:15 **Classroom:** 61206 **Office hours**: Sun, Tues: 9:45 - 11:15, Mon, Wed: 8:15 - 9:45

Course Outlines:

Week	Topic
1	Concrete as a structural material.
2,3	Cement; types, manufacturing, properties, hydration, and tests.
4	Aggregates; classifications, mechanical and physical properties.
5	Quality of water; mixing water, curing water, and tests.
6, 7	Mixing, handling, placing, and compacting concrete.
8, 9, 10	Fresh concrete; workability, segregation, bleeding, and tests.
11	Admixtures
12	Development of strength
13, 14	Strength of concrete; compressive, tensile, flexural, splitting, and tests.
15, 16	Concrete mix design.

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Develop an understanding of concrete as a structural material	[1,2]
2.	Develop an understanding of cement types, manufacturing, properties, hydration, and testing	[1,7]
3.	Analyze aggregate data and classify its types, mechanical and physical properties	[2,6]
4.	Develop an understanding of quality of water and admixtures used in concrete production	[2,7]
5.	Apply knowledge to decide best method for concrete mixing, handling, placing, and compacting	[6,7]
6.	Evaluate fresh concrete properties based on testing results	[6]
7.	Evaluate hardened concrete properties based on testing results	[6]
8.	Perform concrete mix design	[1,2,7]

Assessment Guidance:

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

Exams: The students will be subjected to one scheduled exam during the semester.

Quizzes: (2-4) 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:

Midterm Exam	30%
Semester works	30%
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 2022/2023

Course Details:

Title:	Construction of Materials Laboratory (0670216)
Prerequisite:	Construction of Materials (0670214)
Credit Hours:	1 credit hours (10 weeks per semester, approximately 30 contact hours)
Textbook:	Construction of Materials Laboratory Manual
References:	American Society of Testing and Materials. (2014).
Course Description:	Aggregate Tests: Specific Gravity, Absorption, Abrasion, and Sieve Analysis Cement Paste Tests: Normal Consistency, Initial Sitting Time, and Final Sitting Time Mortar Tests: Mortar Workability (Flow Table), Compressive Strength, Tensile Strength, and Flexural Strength Concrete Tests: Concrete Workability (Slump test), Compressive Strength, Tensile Strength, and Flexural Strength
Instructor:	Eng. Mohammad Alsweis. **Email**: msweis@philadelphia.edu.jo **Office**: Surveying lab., No. (61-113) Ext: 2512 **Class hours**: Sun, Wed: 13:10-16:00

Course Outlines:

Week	Test
1	Sieve Analysis for Aggregate
2	Los Angeles Abrasion
3	Specific Gravity of Course Aggregate
4	Absorption of Course Aggregate
5	Normal Consistency of Cement Paste
6	Initial Sitting Time, and Final Sitting Time of Cement Paste
7	Mortar Workability (Flow Table)
8	Compressive Strength, Tensile Strength, and Flexural Strength for Mortar
9	Concrete Workability (Slump test)
10	Compressive Strength, Tensile Strength, and Flexural Strength for Concrete

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Recognize the components of concrete mixture (cement, water, sand, and/or aggregate) and understand how to test these components before the mixing	1 , 6
2.	Understand the techniques and experiments that used to test the aggregate that used in concrete mix which are sieve analysis for aggregate size distribution, Los angeles abrasion for aggregate hardness, and specific gravity and absorption of aggregate	1 , 6
3.	Understand the experiments that used to test cement paste quality which are normal consistency and initial and final sitting time	1 , 6
4.	Recognize the experiments that used to determine mortar workability (flow table) and mortar strength (compressive, tensile, and flexural strength)	1 , 6
5.	Recognize the experiments that used to determine concrete workability (slump) and concrete strength (compressive, tensile, and flexural strength)	1 , 6

Assessment Guidance:

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

Technical Reports:	The students should submit a technical report after each laboratory experiment. The report sub-titles are Introduction, Objectives, Procedures and Equipment, Calculations, Results, and Conclusion.
Quizzes:	(2) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
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:

Quizzes	20%
Technical Reports	40%
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 & Tech. - Civil Engineering Department
First Semester 2022/2023

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:	Surveying principles and practices, 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 electronic 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 hours:** Sun,& Tue,:8:15- 9: 45 & 11:15 – 12:45 Mon. & Wed:8:15 -9:45 , 12:45 – 2:15

Course Outlines:

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

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	[1, 2,]
2.	Recognize and apply trigonometric formulas to solve variety of practical problems	[2, 6]
3.	Learn value of measurements	[1 ,2, 6]
4.	Ability to solve most of the surveying problems	[1 , 2]
5.	Analyzing data effectively	[1 , 2 ,6]
6.	Determine and defend results	[1]

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 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:

Mid Term Exam	30%
Quizzes and participation	30%
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.

Oct, 2022

Philadelphia University

Faculty of Engineering and Technology

Department of Civil Engineering

First Semester 2022/2023

Course Details:

Title:	Surveying Laboratory (0670262)
Prerequisite:	Surveying (0670261)
Credit Hours:	1 credit hours (10 weeks per semester, approximately 30 contact hours)
Textbook:	Surveying Laboratory Manual
References:	Surveying Fundamentals and Practices, 6th edition, Jerry Nathanson, Michael T. Lanzafama, Philip Kissam
Course Description:	Pacing and Taping, Level Instrument, Leveling, Profile Drawing, Contour Map, Planimeter Device and Scaling, Theodolite Instrument, Azimuth and Bearing, Loop and Link Traverse, Measurement of the length (width) of an obstructed building using Theodolite, and Measuring an object height by measuring vertical angle.
Instructor:	Eng. Mohammad Karim Al-Sweis **Email**: msweis@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 61-113, Ext: 2512 **Class hours**: Mon , Tues: 13:10-16:00

Course Outlines:

Week	Topic
1	Scaling and Planimeter device
2	Leveling and ;level instrument
3	Staff reading and level methods
4	Contour map
5	Theodolite instrument and deviations
6	Link and loop traverse (Coordinates)
7	Determination of horizontal distance using theodolite
8	Vertical angle applications
9	Taping and pacing

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the technique to use the tape to measure the horizontal and inclined distances	1 , 6
2.	Understand how to setup and use the level instrument to determine the point elevation.	1 , 6
3.	Understand how to setup and use the Planimeter device to determine map areas.	1 , 6
4.	Understand how to setup and use the theodolite instrument to solve loop and link traverse and to measure the obstructed distances	1 , 6

Assessment Guidance:

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

Reports and homework:	The students should submit a technical report after each laboratory experiment. The report sub-titles are Introduction, Objectives, Procedures and Equipment, Calculations, Results, and Conclusion.
Quizzes:	(2) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
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:

Quizzes and Homework	20%
Technical Reports	40%
Final Exam	40%
Total:	100%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2022/2023

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
References:	• A policy on geometric design of highways and streets, 4 th edition , 2001, American Association of State Highway and Transportation Officials "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
Instructor:	Eng. Adnan Abdelhadi Email: aabdelhadi@philadelpia.edu.jo Office: Civil Engineering Building, Room 61-301 / A Class hours: Mon & Wed :8:15 – 9:45 Office hours: Sun,& Tue,:8:15- 9: 45 & 11:15 – 12:45 Mon. & Wed:8:15 -9:45 , 12:45 – 2:15

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.	Knowledge about the elements of road	[1, 2, 6]
2.	Determine the Characteristics of road classification	[1, 2, 6]
3.	Design the horizontal and vertical Alignment	[1, 2, 6]
4.	Designing the different types of intersections	[1, 2, 6]
5.	Earthworks computations	[1, 2, 6]

Assessment Guidance:

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

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

Grading policy:

Mid-Term Exam	30%
Quizzes and participation	30%
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.

Oct,2022

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
1st Semester 2022/2023

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/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 214 **Class hours**: Sun, Tues: 9:45-11:15 **Office hours**: Sun, Tues: 8:15-9:45 and 11:15-12:45 Mon, Wed: 8:15-9:45 and 11:15-12:45

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 , 16	Introduction to Consolidation and settlement

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams:	The students will be subjected to one scheduled written exam, midterm exam during the online semester. The exam will cover materials given in lectures in the previous 3-4 weeks.
Quizzes:	(3-4) Quizzes of (15-20) minutes will be conducted during the online 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:

Mid Term Exam	30%
Quizzes and participation	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering & Technology - Department of Civil Engineering

1st Semester 2022/2023

Course Details:

Title:	Fluid Mechanics lab (**0670382**)
Prerequisite:	Fluid Mechanics of Material **0670381**
Credit Hours:	1 credit hours (14 weeks per semester, approximately 28 contact hours)
Textbook:	1.Laboratory manuals 2.Fluid Mechanics; Russell C. Hibbeler, Pearson, 2014
References:	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 fluid properties Density and Viscosity, Center of pressure on submerged plan surface, Impact of water jet, Pipe flow **Characteristics Of Centrifugal Pump**(single ,series ,parallel), Pump Cavitation**.**
Instructor:	Eng. Esraa AL-hyasat **Email**: ehyasat@philadelphia.edu.jo **Office**: Civil Engineering building, room 205, ext: 2556

Course Outlines:

Week	Topic
1	**Introduction**
2	**Density and Viscosity**
3	**Center of pressure on submerged plan surface**
4	**Impact of water jet**
5	**Fluid meter in incompressible flow**
6	**Pipe flow**
7	**Characteristics Of A Single Centrifugal Pump**
8	**Coupling Of Two Identical Pumps (Series)**
9	**Coupling Of Two Identical Pumps (Parallel)**
10	**Pump Cavitation**

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be able to solve specific engineering problems related with fluid static	[1]
2.	Measure volume flow rate and relate it to flow velocity	[1 , 6]
3.	Understand basic units of measurement, convert units, and appreciate their magnitudes	[2. 6]
4.	Understand the basics of fluid mechanics at rest	[1]
5.	Use word and excel software in writing reports.	[6. 7]
6.	Compare the results of analytical models introduced in lecture to the actual Behavior of real fluid flows and draw correct and sustainable conclusions.	[1 , 2 , 6]

Assessment Guidance:

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

Lab Reports:	The students will submit a report for each experiment at the beginning of each lab.
Quizzes and lab work:	(2-3) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the lab.

Grading policy:

Lab Reports	40%
Quizzes and lab work	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 14 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 2022/2023

Course Information

Title: **Reinforced Concrete I (0670411)**
Concrete and Steel Structures (0670416)
Sun, Tue 9:45-11:15
Classroom: 206

Prerequisite: Structures II (0670312)

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

Textbook:
- Nilson, A.H., Darwin, D., and Dolan, C.W. (2013). "Design of Concrete Structures", 14th edition , McGraw Hill, 2009
- William T. Segui (2012). "Steel Design", 5th edition.

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

Course Description: 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. Shear behavior of reinforced concrete sections, design for shear reinforcement, analysis and design of reinforced concrete solid slab and ribbed slab, analysis and design of short columns under axial and bending, analyze steel and its structural properties, design of tension members, design of compression members.

Website: https://www.philadelphia.edu.jo/academics/maldwaik/

Instructor: **Dr. Mais Aldwaik**
Email: maldwaik@philadelphia.edu.jo
Office: Civil engineering building, room 214
Office hours: Sun, Tues, Thu: 11:15-12:45. Mon, Wed: 9:45-11:15,

Course Outline

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

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, students should:

1.	Recognize design sequence and process for designing of RC structures.	1,2
2.	Learn how to use and apply building codes (ACI and AISC)	7
3.	Establish an understanding of the mechanical behaviors of reinforcement steel, concrete and reinforced concrete members, and steel members.	2,7
4.	Understand the flexural behavior of reinforced concrete beams, investigate and design beams and slabs for bending and shear, and short columns for axial and bending loads.	2,7
5.	Analyze and design of compression and tension behavior of steel members	1,2,7

Assessment Guidance

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

Exams: Students will be subjected one midterm exam during the semester.

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

Homework: One-three homeworks will be assigned during the semester. You are usually given one week to submit each home work. 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.

Projects: One course project will be required by the end of the semester. Microsoft Excel will be used for the project.

Final Exam: 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%
Home works, Quizzes, and Projects	30%
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 2022/2023

Course Information

Title: **Reinforced Concrete II (0670412)**
Sun, Tue 11:15-12:45
Classroom: 206

Prerequisite: Reinforced Concrete I (0670411)

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

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

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

Course Description: Serviceability requirements of flexural members. Members subjected to Torsion and combined Shear and torsion. Design of slender (Long) columns, sway and non-sway frames. Two-way slab design: Solid and Ribbed, Coefficient Method, Direct Design Method, and Equivalent Frame Method. Stairs design. Foundation design (wall, isolated, eccentric, combined). Structural walls design: Shear walls, retaining walls.

Website: https://www.philadelphia.edu.jo/academics/maldwaik/

Instructor: **Dr. Mais Aldwaik**
Email: maldwaik@philadelphia.edu.jo
Office: Civil engineering building, room 214
Office hours: Sun, Tues, Thu: 11:15-12:45. Mon, Wed: 9:45-11:15.

Course Outline

Week	Topic
1,2	Introduction, Serviceability analysis: deflection
3,4	Beam torsion analysis and design
5,6,7	Two-way slab design: Coefficient Method, Direct Design Method, and Equivalent Frame Method.
8,9	Design of slender (Long) columns, sway and non-sway frames.
10,11,12	Foundation design (wall, isolated, eccentric, combined).
13	Stairs design
14,15	Structural walls design: Shear walls, retaining walls.

Course Learning Outcomes with reference to ABET Student Outcome

Upon successful completion of this course, students should:

1.	Understand and apply serviceability requirements for RC beams and slabs	1,2
2.	Analyze and design members subjected to torsion, and combined shear and torsion.	1,2
3.	Distinguish between sway and nonsway frames, short and long (slender) columns.	2,7
4.	Decide of which foundation system is required for vertical elements, and design of single and combined foundations.	2,7
5.	Understand the flexural behavior of two-way reinforced concrete slabs under uniformly distributed loads using the Direct Design Method and the Equivalent Frame Method	2,7
6.	Apply the basic principles of the ACI provisions to RC elements design.	7

Assessment Guidance

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

Exams: Students will be subjected to a midterm exam during the semester.

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

Homework: One-three homeworks will be assigned during the semester. You are usually given one week to submit each home work. Homework should be solved individually and submitted before or on a set agreed date.

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

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

Final Exam: 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%
Home works, Quizzes, and term work	30%
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
1st Semester 2022/2023

Course Details:

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

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Be familiar with the AISC Steel Construction Manual	7
2.	understand the concepts of structural design by the Load and Resistance Factor Design method and the Allowable Stress Design method, and will understand the differences between the methods	1,2,7
3.	Analyze and design steel tension members	2,7
4.	And analyze and design steel compression members	2,7
5.	Analyze and design steel beams	2,7

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 one scheduled exam during the semester.

Quizzes: (2-3) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

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

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

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

Grading policy:

Mid-term Exam	30%
Quizzes and participation	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering & Technology - Department of Civil Engineering

1st Semester 2022/2023

Course Details:

Title: Hydraulics (0670441)

Prerequisite: Fluid Mechanics 760381

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

Textbook:

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

References:

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

Course Description:

Flow in pipes, Pipes Networks Analysis, Open Channel Fundamentals, Open Channel Flow Analysis, Classification of Flow,(Uniform Flow), Critical Flow (Supercritical, Subcritical), Gradually Varied Flow, Water Surface Profile Analysis, Rapid Varied Flow (Hydraulic Jump), Pumps.

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

Instructor:

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

Course Outlines:

Weeks	Topics	
1 ,2,3	Introduction (revision) Units and dimension, review of fluid mechanics	Chapter (1,2)
4,5,6,7	Water Flow in Pipes, Description of Pipe Flow, Continuity Equation, Forces, In Pipe Flow, Energy Loss Due to Friction, Empirical Formulas for Friction Head, Local (Minor)	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.	Chapter (4)
12,13	Water pumps, Centrifugal, propeller and jet pumps, pump selection, pumps in parallel or in series, specific speed and pump similarity.	Chapter (5)
14,15	Open Channel Fundamentals, Open Channel Flow Analysis, Classification of Flow,(Uniform Flow), Critical Flow (Supercritical, Subcritical), Gradually Varied Flow, Water Surface Profile Analysis	Chapter (6)

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams: The students will be subjected to one scheduled exam during the semester.

Quizzes: (2-3) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

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

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

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

Grading policy:

Mid-term Exam	30%
Quizzes and participation	30%
Final Exam	40%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering & Technology - Department of Civil Engineering

1st Semester 2021/2022

Course Details:

Title:	Hydraulics Laboratory (**0670442**)
Prerequisite:	Hydraulics **0670441**
Credit Hours:	1 credit hours (14 weeks per semester, approximately 28 contact hours)
Textbook:	1.Laboratory manuals Hydraulics Laboratory Manual", (Prepared Eng.Isra'a Alsmadi/ Civil Engineering Department/Philadelphia University),(2019).
Course Description:	Calibration of bourdon gauge, Metacentric height of floating bodies , Osborne Reynolds demonstration , Impact of jet, Orifice and free jet flow determination of coefficient of velocity and coefficient of discharge, Triangular and rectangular notches and Hydraulic gradient with ground water flow.
Instructor:	Eng. Esraa AL-hyasat **Email**: ehyasat@philadelphia.edu.jo **Office**: Civil Engineering building, room 205, ext: 2556

Course Outlines:

Week	Topic
1	Calibration of Bourdon Gauge
2	Metacentric Height of Floating Bodies
3	Osborne Reynolds Demonstration
4	Impact of Jet (I)
5	Impact of Jet (II)
6	Orifice and Free Jet Flow Determination of Coefficient of Velocity
7	Orifice and Free Jet Flow Determination of Coefficient of Discharge
8	Coefficient of Discharge for a Rectangular Notch
9	Coefficient of Discharge for a Triangular Notch
10	Hydraulic Gradient with Ground Water Flow

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Identify, name, and characterize flow patterns and regimes.	[1]
2.	Understand basic units of measurement, convert units, and appreciate their magnitudes.	[1 , 6]
3.	Measure volume flow rate and relate it to flow velocity	[2. 6]
4.	Use word and excel software in writing reports.	[1]
5.	Compare the results of analytical models introduced in lecture to the actual behavior of real fluid flows and draw correct and sustainable conclusions.	[6. 7]
6.	Identify, name, and characterize flow patterns and regimes.	[1 , 2 , 6]

Assessment Guidance:

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

Lab Reports:	The students will submit a report for each experiment at the beginning of each lab.
Quizzes and lab work:	(2-3) Quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Final Exam:	The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the lab.

Grading policy:

Lab Reports	40%
Quizzes and lab work	20%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 14 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 2022/2023

Course Details:

Title: Sanitary Engineering (067044300)

Prerequisite: Environmental Engineering (067034300)

Credit Hours: 3 credit hours

Textbook: "Water and Wastewater Technology", 6th Edition, Mark J. Hammer & Mark J. Hammer Jr., Prentice Hall, 2007

References: Water Supply and Pollution Control, 7th Edition, Warren Viessman & Mark J. Hammer, Pearson Prentice Hall.
Wastewater Engineering, Treatment and reuse, Metcalf and Eddy, McGraw-Hill Education, 2003

Course Description: Sources of water, Population estimation, water demand and type of waste water, hydraulic of sewage systems and design principles, water distribution systems, sewer water collection system design and principles, biological and chemical wastewater quality Unit operations and processes. Basics in water and wastewater engineering design; Wastewater generation and collection, Biological wastewater treatment and reuse including activated sludge

Instructor: **Eng.**Isra'a Alsmadi
Email: ialsmadi@philadelphia.edu.jo
Office: Sanitary lab No.617, ext: 2638
Office hours: All week days: 8:15-11:15

Course Outlines:

Week	Topic
1	Fundamental Concepts and Overview
2	Water demand and population forecast
3	Water distribution
4,5	wastewater generation and collection
6,7	Wastewater treatment (physical and chemical)
8	Biological wastewater treatment process and concepts

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams: The students will be subjected to Mid 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:

Mid Exam	30%
Homework and projects	12%
Quizzes and participation	8%
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 2022/2023

Course Details:

Title: Sanitary Laboratory Lab (0670444)

Prerequisite: Sanitary Engineering (Concurrent)

Credit Hours: 1 credit hours (14 weeks per semester, approximately 28 contact hours)

Textbook: Laboratory manuals

References:

Water Supply and Pollution Control, 7th Edition, Warren Viessman &Mark J. Hammer, Pearson Prentice Hall.

Course Description: Determination of pH ,Preparation of Primary& Secondary Standards ,Acid – Base Titration ,Determination of Acidity of Water, Determination of Alkalinity of Water, Determination of Hardness Water, Determination Of Turbidity, Determination Of Conductivity ,JAR Testing of Coagulation-Flocculation Process, Determination of Solid and Determination of Dissolved Oxygen

Instructor: Eng. Isra'a AL- Smadi
Email: ialsmadi@philadelphia.edu.jo
Office: Sanitary laboratory, room 617, ext: 2638

Course Outlines:

Week	Topic
1	Introduction to report writing
2	Determination of pH
3	Preparation of Primary& Secondary Standards
4	Acid – Base Titration
5	Determination of Acidity of Water
6	Determination of Alkalinity of Water
7	Determination of Hardness Water
8	Determination of Turbidity
9	Determination of Conductivity
10	JAR Testing of Coagulation-Flocculation Process
11	Determination of Solid
12	Determination of Dissolved Oxygen
13	Review
14	Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Students are able to work cooperatively and effectively as a team member and share ideas	5
2.	Follow experimental and theoretical procedures for measurement some of the important characteristics of water quality such as pH, alkalinity, acidity …etc.	1,6
3.	The students will be able to effectively present information visually using textual and graphical techniques	3
4.	The students will be able to evaluate their results, by comparing them the standards of drinking water.	1,6

Assessment Guidance:

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

Lab Reports:	The students will submit a report for each experiment at the beginning of each lab .No late submission will be accepted. Missing reports will result in a zero grade. Cheating is not tolerated. A student guilty of cheating will receive a zero grade. Cheating is any form of copying of another student's work, or allowing the copying of your own work.
Quizzes and lab work:	(4-5) Quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
Final Exam:	The students will undergo a scheduled final exam (theoretical and practical) at the end of the semester covering the whole materials taught in the lab.

Grading policy:

Lab Reports	30%
Quizzes and lab work	20%
Final Exam	50%
Total:	100%

Attendance Regulation:

The semester has in total 28 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 2022/2023

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" (2ndEdition), Techno Press 3000, 2004. 2. Nilson, A.H. "Design of Prestressed Concrete" (2nd Edition), Wiley, 1987.
Course Description:	This course covers the fundamental theories and principles of prestressed concrete members. This course includes: design, investigation of beams, columns.
Website:	http://www.philadelphia.edu.jo/academics/salkhawaldeh/
Instructor:	Dr. Sawsan Alkhawaldeh **Email**: salkhawaldeh@ philadelphia.edu.jo **Office**: Civil engineering building, Room 315 **Class hours**: Sun, Tues: 8:15 - 9:45 **Classroom:** 61206 **Office hours**: Sun, Tues: 9:45 - 11:15 Mon, Wed: 8:15 - 9:45

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Exams: The students will be subjected to one scheduled exam during the semester.

Quizzes: (2-4) 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:

Midterm Exam	30%
Semester works	30%
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
1st Semester 2022/2023

Course Details:

Title:	Foundation Engineering (0670531)
Prerequisite:	Soil Mechanics (0670331)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	1- Bowles J.E., "Foundation Analysis and Design" , McGraw-Hill
References:	• Tomlinson M.J., "Foundation Design and Construction", A pitman International Text • Teng W.C., "Foundation Design", Prentice – Hall • Das B.M., "Principles of Foundation Engineering", Cengage Learning
Course Description:	This course will focus on the geotechnical aspects of foundation engineering. The course is designed to provide students with methods of analysis and design for various geotechnical systems. Topics to be covered include: A review of the basic topics of soil mechanics, subsurface investigation, bearing capacity, settlement, and earth retaining structures.
Website:	http://www.philadelphia.edu.jo/academics/aodeibat/
Instructor:	Eng. Abdallah Odeibat **Email**: aodeibat@philadelphia.edu.jo **Office**: Civil Engineering Building, Room 215, Ext: 2182 **Class hours**: Mon, Wed: 12:45-14:15 **Office hours**: Sun, Tues : 8:15-9:30 and 11:15-12:30 Mon, Wed: 8:15-9:30 and 11:15 -12:30

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams: The students will be subjected to one scheduled exam during the semester.

Quizzes: (2-3) quizzes of (15-20) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

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

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

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

Grading policy:

Mid-term Exam	30%
Quizzes and participation	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering & Technology - Department of Civil Engineering

First Semester 2022/2023

Course Details:

Title:	Hydrology (0670541)
Prerequisite:	Hydraulic (0670441)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 44 contact hours)
Textbook:	Viessman , W., and Lewis, G., Introduction to Hydrology, 5th edition, Prentice Hall. (ISBN 0- 67-399337-x).
References:	• Engineering Hydrology, Wilson, E. M. Macmillan, London. 1983 . Hydrology for Engineers. Linsley, R., Kohler, M., Paulhus, JMcGraw Hill. • Hydrology An Introduction, WILFRIED BRUTSAERT, Cambridge University press. 8th edition, 2013 • Water Authority (WAJ): Studies and reports related to Jordan's hydrology.
Course Description:	This course introduces students to the basic components of surface water hydrology including the components of the hydrological cycle as well as other hydrological topics like evapotranspiration, precipitation, interception, run off , stream flow and groundwater flow. it Prepares students to develop engineering solutions to hydrological problems by emphasizing the interlinkages of processes in hydrological cycle. Attention is paid to techniques for the measurement and collection of data on the different components. The course also covers engineering applications in hydrological analysis and design
Website:	https://www.philadelphia.edu.jo/academics/myounes/
Instructor:	Eng.Adnan Abdelhadi **Email**: aabdelhadi@philadelphia.edu.jo **Office**: Civil Engineering Building, Office No 210 D ext: 2604 **Classes hours:** Mon & Wed: 9:45-11:15 **Office hours:** Sun,& Tue,:8:15- 9: 45 & 11:15 – 12:45 Mon. & Wed:8:15 -9:45 , 12:45 – 2:15

Course Outlines:

Weeks	TOPIC
1 ,2,3	**INTRODUCTION TO HYDROLOGY, Hydrologic cycle, hydrologic Budget .**
4,5,6	**PRECIPITATION.**
7,8,9	**EVAPORATION & Transpiration . infiltration**
10,11,12,13	**Stream Flow, Runoff and Hydrograph . Hydrograph Analysis, Unit Hydrograph Theory and its applications, Synthetic Unit Hydrograph**
14,15	**Groundwater hydrology , reservoir and wells**

Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

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

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

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

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

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

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

Grading policy:

Mid Exam	30%
Homework and projects	15%
Quizzes and participation	15%
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, 2022

Philadelphia University

Faculty of Engineering and Technology - Department of Civil Engineering

First Semester 2022/2023

Course Details:

Title:	Liquid and Solid Waste Treatment (0670545)
Prerequisite:	Sanitary Engineering (0670443)
Credit Hours:	3 credit hours (15 weeks per semester, approximately 45 contact hours)
Textbook:	"Integrated Solid Waste Management Engineering Principles and Management Issues, G. Tchobanoglous, H. Theisen, S. Vigil, Irwin McGraw Hill. Water and waste water technology, VI edition, Mark J. Hammer & Mark J. Hammer Jr., Prentice hall, 2007
References:	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:	Quantifying the refuses and their composition, integrated solid waste management, collection, transport and final disposal, engineering design and proper planning for waste handling, waste treatment technologies, Principles design of landfill, Material and heat recovery, opportunities and challenges of solid waste, waste water treatment and unit operation in waste water treatment, sludge processing, advanced treatment methods.
Instructor:	Eng.Isra'a Alsmadi Email: ialsmadi@philadelphia.edu.jo Office: Sanitary lab No.617, ext: 2638 Office hours: All week days: 9:45-11:15

Course Outlines:

Week	Topic
1	Fundamental Concepts and Overview
2,3	Solid waste characterization (physical and chemical)
4	Solid Classification
5,6,7	Integrated solid waste management processes (generation and handling at source)
8,9,10	Integrated solid waste management processes (collection, transport)
11,12,13	Solid waste disposal, treatment and landfill design
14,15	Hazardous waste management and treatment

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Characterize the solid waste and identify the physical and chemical prosperities of solid and hazardous wastes	[2, 7]
2.	Understand the elements of integrated solid waste management and their interactions.	[1 , 2]
3.	Understand the modern concepts of solid waste management including waste minimization, material and heat recovery and best practices.	[1,2,7]
4.	Determine the basic requirement for solid waste management and landfill design.	[1,2]
5.	Understand main solid waste management technologies and process (composting, incineration, Pyrolysis, routing, sludge digestion, etc)	[1,7]

Assessment Guidance:

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

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

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

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

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

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

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

Grading policy:

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

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2022/2023

Course Details:

Title:	Project Management (0670571)
Prerequisite:	Reinforced Concrete 2 (0670412)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Project management for engineering and construction.,New York: McGraw - Hill Higher Education
References:	A Guide to the Project Management Body of Knowledge (PMBOK Guide) -Modern Construction Management / Frank Harris and Ronald McCaffer, 6th ed, 2006 Oberlender, G. D., &Oberlender, G. D. (2013, 3rd edition). *Project management for engineering and construction*., New York: McGraw -Hill Higher Education - Sullivan, W. G., Wicks, E. M., & Koelling, C. P. (2015). *Engineering economy*. Pearson.
Course Description:	Planning, project management concepts, network analysis using arrow techniques network analysis. Overlapping networks, project monitoring, project control, time- cost trade off.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Dr. Ala'a Alshdiefat** **Email:aalshdiefat@philadelphia.edu.jo** **Office: Civil engineering building, room, 210B ext. 2436** **Office hours: Sun, Tue and Thu: 11:15-12:45** **Mon and Wed 11:15-12:45**

Course Outlines:

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

13,14	Censorship and Finish the project.
15	Project presentation
16	Review& Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Sub-Exams: The students will be subjected to one scheduled written exam,mid term exam during the semester. The exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) 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 should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

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

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

Mid Term Exam	30%
Project and Presentation	25%
Quizzes and participation	5%
Final Exam	40%
Total:	100%

Attendance Regulation:

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

Philadelphia University

Faculty of Engineering and Technology
Department of Civil Engineering
First Semester 2022/2023

Course Details:

Title:	Specifications, Contracts, and QuantitySurveying(0670572)
Prerequisite:	Reinforced Concrete 2 (0670412)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	Merritt, F. S., & Ricketts, J. T. (2001). *Building design and construction handbook* (Vol. 13). New York, NY, USA: McGraw-Hill. McMULLAN, J. (2019). *Construction Contract Administration Principles: Guide To Construction Contract Professionals*.
References:	The Jordanian Ministry of Public Works and Housing.(2013). *Jordanian Contract book*. http://www.jcca.org.jo/DataFiles/2017/Files/contractor2010-1013.doc The Jordanian Ministry of Public Works and Housing. *Civil Engineering Specifications for Jordanian Construction Projects Book.*
Course Description:	The course intends to introduce types of contractual procedures, types of contracts, procurement, contract conditions, technical specification for buildings, bills of quantities, pricing and quantity measurement.
Website:	http://www.philadelphia.edu.jo/academics/alaa
Instructor:	**Dr. Ala'a Alshdiefat** **Email:aalshdiefat@philadelphia.edu.jo** **Office: Civil engineering building, room, 210B ext. 2436** **Office Hours: Sun, Tue and Thu: 11:15-12:45** **Mon and Wed 11:15-12:45**

Course Outlines:

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

11	Blockworks, Plaster works, and painting works
12	Tile works, MEP works
13	Preparing BOQ, Preparing contract documents
14	Disable Specifications in construction projects
15	Project presentation
16	Review& Final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

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 one scheduled written exam,mid term exam during the semester. The exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3) 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 should be solved as group and submitted before or on a set agreed date. Student may be assigned to present project(s).

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

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

Mid Term Exam	30%
Project and Presentation	25%
Quizzes and participation	5%
Final Exam	40%
Total:	100%

Attendance Regulation:

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