Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Engineering Statistics	**Course code: 0670202**
Course Level: 2nd year	**Course prerequisite(s): 0210102**
Lecture Time: 10:10 – 11:00 Sun/ Tues/Th. **12:10 – 13:00 Sun / Tues**	**Credit hours:** 2

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng. Othman Aldmour	**lecturer**	**311**	**09:00 – 10 :00** **11:00—12:00** **Sun/Tues.** **10:00- 11.00** **Mon./Wed**	**Othman.mm1@gmail.com**

Course module 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.

Course module objectives & outcomes:
At Completing this module the student should be able to:
- Understand Probability theory
- Apply Statistical Analysis to collected data
- Understand basics of experiments design and analysis

Text Book:
Applied Statistics and Probability for Engineers by D. Montgomery and G. Runger 5th edition John Wiley and Sons, Inc, 2011

Assessment instruments
- **Mid-Term Exams:** Two in-class exams will be given (20 marks each).
- **Assignments/Activities:** Some Assignments will be given throughout the semester and Attendance, (10) marks**).**
- **Quizzes:** 5 Quizzes will be offered (2 marks each).
- **Final examination**: 40 marks

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes, Home works ,Attendance	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's work is strictly prohibited.
  - Students should write their own work.
  - The Instructor follows general university "Academic Dishonesty / Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Course Academic Calendar			
Week	**Subject**	**Start on:**	**Notes**
1	Introduction, The role of statistics in engineering	16/10/2016	
2	Types of Statistics, Types of Variables, Levels of Measurement Organizing Data.	23/10/2016	
3	Graphic Presentation of Frequency Distribution	30/10/2016	
4	Measures of Central Tendency	06/10/2016	
5	Measures of Variation, Measures of position.	13/11/2016	
6	Measures of Variation, Measures of position.	22/11/2016	
			1st Exam
7	Probability Theory	27/11/2016	
8	Probability Theory	04/12/2016	
9	Discrete Random Variables and Probability Distribution	11/12/2016	
10	Discrete Random Variables and Probability Distribution	18/12/2016	
11	Discrete Random Variables and Probability Distribution	25/12/2016	
			2nd Exam
12	Continuous Random Variables	01/01/2016	
13	Continuous Random Variables	08/01/2016	
14	Continuous Random Variables	15/01/2016	

15	Regression and correlation	22/01/2016	
16	Regression and correlation		
17	**Final exam**	To be announced later	Final Exam

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Module references Books

References	
1-	**Elementary statistics**, Allan G. Bluman. 8 Th editions.
2-	**Applied statistics for engineers and scientists** , Devore , Jay L. Farnum , Nicholas R. JT.AUTH.

Philadelphia University
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Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Statics	**Course code**: 0670211
Course Level: 2nd year	**Course prerequisite(s):** 0210106
Lecture Time: 11:15 to 12:45 Mon., wed. (Sect. 2)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Mohammed Al-Iessa	Associate Prof.	61-213	As Announced on office door	mmalkaissi@yahoo.com

Course module 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.

Course module objectives & outcomes:

Students who successfully complete this course will be able to:

- Understand force vectors and resultants.
- Determine the moment of a force about a point.
- Determine the reactions of a rigid body.
- Perform analysis of trusses and frames.
- Draw shear and moment diagrams of a beam.

Course/ module components:

Books (title, author (s), publisher, year of publication):

- Engineering Mechanics – Statics, SI Edition, 13th edition, Vol. 1, R. C. Hibbeler and Kai Beng Yap, PEARSON, 2013.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

Evaluation of students' performance (final grade) will be based on the following categories:

- **Mid-Term exams:** Two in-class exams will be conducted during the semester.
- **Quizzes:** FOUR to FIVE (20 minutes each) quizzes will be offered during the semester, these quizzes will cover material discussed during the previous two weeks of lectures.
- **Home works and Project:** Home works and project may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks. The final examination will cover all the class material discussed during the semester.

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination – Mid term	**20%**
2nd examination – Mid term	**20%**
Quizzes and home works	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/Module academic calendar:

CHAPTER	TITLE	WEEKS
Chapter 1	Introduction (general principles)	2
Chapter 2	Force vectors	2
Chapter 3 Mid-Term Exam I	Equilibrium of a particle	2
Chapter 4	Force system resultants	2
Chapter 5 Mid-Term Exam II	Equilibrium of a rigid body	2
Chapter 6	Structural analysis of Trusses	2
Chapter 7	Internal forces (Shear and moment diagrams)	2
Final Examination		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Engineering Mechanics – Statics, SI Edition, 13th edition, Vol. 1, R. C. Hibbeler and Kai Beng Yap, PEARSON, 2013.
- 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.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Strength of Materials	**Course code**: 670212
Course Level: 2nd Year	**Course prerequisite(s):** 670211
Lecture Time: 8.10-9.10 & 10:10-11:10 Sun., Tue.&.Thu. , 8:15 -9:45 &11:15-12:45 Mon.,&Wed..	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. A. J. Dabdab	Associate Prof.	61-213	As shown on my office door	

Course module 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.

Course module objectives

Traditionally, the purpose of this class has been to teach some of the analytical techniques used to insure that a particular structural design is safe and durable. The most effective way to teach these techniques is to have the students work lots of short drill problems like the ones in the textbook. The drill **problems represent only a small part of the structural analysis** (one joint or member in the structure), and the **structural analysis represents only one part of the overall design process**. The analytical techniques should be learned or understood in the context of the overall design process. Specific course objectives are:

1. To understand the axial, shear and bearing stresses associated with simple truss design and analysis.
2. To understand normal and shear strains and how they relate to deformation.
3. To understand the difference between applied loads and allowable loads and how to calculate (or apply) factor of safety.
4. To interpret a stress-strain diagram and understand elastic constants.
5. To understand the stress-strain and load-displacement relationships for axial force members.
6. To learn to calculate the stresses, strains and angular displacements for torsion members (shafts), and to understand how power is transmitted through a gearbox.
7. To recall how to calculate the shear-force and bending-moment diagrams for beams.
8. To learn to calculate the stresses, strains and displacements for beams under various loading configurations.
9. To learn to calculate the stresses, strains and displacements for pressure vessels.
10. To understand the concepts of stress and strain as second order tensors.

11. To learn how to calculate the principal stresses, and how they are related to the failure of various materials.
12. To use the mechanics of materials technique to analyze a few structures.

Text (s) and other Materials

Mechanics of Materials ,Hibbeler, R, C ,12th Edition .

Teaching methods:

Lectures , problem solving, etc.

Assessment instruments

- Two Mid – Term Exams.
- **Quizzes:** 4
- **Homework**

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- **Final examination**:

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Course / module academic calendar

Chapter	Week	Subject
Introduction- Concept of Stress	1	**Equilibrium of a deformable body, average normal and shear stress, bearing stress, allowable stress, factor of safety, deformation.**
Stress and Strain - Axial Loading	2&3	**Normal and shear strain, the tension test, Hooke's law, Poisson's ratio. thermal stress.**

Chapter	Week	Subject
Torsion	4	The torsion formula, power transmission.
Pure Bending	5&6	Shear and moment diagrams, the flexure formula.
	7	Bending of composite beams, stress concentrations, eccentric axial loading, un-symmetric bending.
Shearing Stress in Beams and Thin-Walled Members.	8	The shear formula, shear stresses in beams, shear flow in built-up members.
Transformation of Stress and Strain	9	Plane stress transformation, general equations of plane stress transformation.
	10	Mohr's circle.
	11	Plane strain, Mohr's circle, failure criteria.
Deflection of Beams	13&14	The elastic curve, slope and displacement by integration method.

Philadelphia University
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Department of Civil Engineering
First Semester, 2016-2017

	Course Syllabus
Course Title: Materials of construction	**Course code: 0670214**
Course Level: 2 year	**Course prerequisite: 0210106**
Lecture Time: MTT 10-10-11-00 **M-W11:15-12:45**	**Credit hours: 3 h**

Academic Staff Specifics

Name	**Rank**	**Office Number and Location**	**Office Hours**	**E-mail Address**
Dr Ahmad Alfraihat	**Asst. Prof.**	**Room: –206 (1)** **Room:206 (2)**	**10-10-11-00**	**aalfraihat@philadelphia.edu.jo**

Course module description:
The course intends to give students a comprehensive idea about the structure and properties of matter,powerful atomic and energy realtionship**,Chemical bonding,Radioactivity,Generalclassificationofconststructionmaterials,Metalliccrystallinestructure,propertiesofmetalandcrystaldefects,Polymers,structure,mechanicalpropertiesElastic/plasticDeformation,creep,toughness,fatigue, Ceramicstructues.Bondingmaterials,propertiesofcementandaggregate,quality of water ,Mixing,Handling,Placing and compacting concrete,Durability ofconcrete,Admixture,Curing,Mixdesignof concrete ,Testing of concreteand bricks and brick work.**

Course module objectives:
The aim of this course is to introduce and detail the main concepts realtionship between structure and properties of materials
The student should be able t**o;Understand structure and properties of construction materials,structure and properties of cement,aggregate and water ,Operatins of mixing ,placing ,curing of concrete ,design of concrete mixes,and brick work.**

Course/ module components

- **Books (title , author (s), publisher, year of publication)**
- D.Tayler"Construction"of-material,1989,A.M.NevilleandJ.J .Brooks;:Concrete Technologe" .longman,latest
- editaion
- Study guide (s) (if applicable)
- **Support material (s):** textbook
- **Homework and laboratory guide (S) if(applicable)**

Teaching methods: Lectures,tutorials,problemsolving discussion group**,etc**
Documentation and academic honesty;
.Documentation style(with illustative example)
.Avoiding palgiarism
,Protection copyright

Assessment instruments

- Quizzes.
- Home works: Practical projects
- Final examination: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20%**
Second examination	**20%**
Final examination: 40 marks	**40%**
Quizzes, Home works Practical projects	**10%** **10%**
Total	**100%**

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
Oct-16 (1)and(2)	IntroductionThe structure of material powerful atomic and energy realshinship,properties of nucleus,types of bonds:	
Oct-23 (3)	Radioactivity,General classification and structure of construction materials,structure and properties of metal,crystal defects.	**Quizz-1**
Oct-31 (4)	Polymers,Properties of solid materials Ceramic Structures	**Home work**
Nov-7 (5)	Portland Cement	
Nov-16-24 (6)	**First examination**	**EXAM 1**
Nov-24 to2Dec (7)	Properties of Aggregate,Quality of Water,admixture	
Dec-8 (8	Mixing,Handing ,concrete mixing ratio	**Quizz-2**
Dec-16 (9)	Placing,Campacting concrete	

Dec-21 (10)	Transporting and handling	
Dec-21 toJan-2 (11)	Second exaamination	EXAM 2
Jan-10 (12)	Admixture,Methods of curing	
Jan-16 (13)	Mix Design of concrete	
Jan-25 (14)	Testing of concrete	**Quizz-3**
Jan-28 (!5)	Curing of concrete and Bricks	
Jun- 28to Feb-5 (16) Specimen examination (Optional)	FINAL EXAMANATION Consensus (1	**EXAM FINAL** Due date Paper work

Expected workload: On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial**.**

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references:

Books;1- D.Tayler"Construction of material,1989

2-,A.M .Neville and J.J .Brooks;:Concrete Technologe" .longman,

3-M. Omary;Scienceof engineering materials ,2009

4-Gambhir.M.L.Concrete Technology,new delhi;Tata McGraw-Hill,1986

5-,A.M.NevilleandJ.J.Brooks;'Propertiesof concrete'.Scientific&Technical,1989

6-Shan Somayaji'Civil Engineering Material'Prentice Hall.Inc2001

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Engineering Geology	**Course code**: 670231
Course Level: 2nd year	**Course prerequisite(s):** None
Lecture Time: 09:45 to 11:15 Mon., Wed. (Section 2) 12:45 to 14:15 Mon, Wed (Section 1)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Yousef Masannat	Professor	61-210	As Announced on office door	Yousef.april@yahoo.com

Course module description:

Mineral, Igneous, Metamorphic and Sedimentary Rocks, Engineering Properties of Rocks, Topographic Maps, Historical Geology and Geologic Maps, Structural Geology, Construction Materials, Subsurface Geology, Site Selection.

Course module objectives & outcomes:

The main purpose of this course is to teach the student how to apply his knowledge in engineering geology in the selection of the proper sites for civil engineering projects, how to assess the potential problems during and after construction and to determine the needed precautionary measures.

Course/ module components:

Books (title, author (s), publisher, year of publication):

- Engineering Geology by Fred G. Bell, Blackwell Science, last edition.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

Evaluation of students' performance (final grade) will be based on the following categories:

- **Mid-Term exams:** Two in-class exams will be conducted during the semester.
- **Quizzes:** Two (20 minutes each) quizzes will be offered during the semester, these quizzes will cover material discussed during the previous two weeks of lectures.
- **Home works and Project:** Home works may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks. The final examination will cover all the class material discussed during the semester.
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Allocation of Marks	
Assessment Instruments	**Mark**
1st examination – Mid term	**20%**
2nd examination – Mid term	**20%**
Quizzes and home works	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/Module academic calendar:

CHAPTER	TITLE	WEEKS
Chapter 1	Minerals	1
Chapter 2	Rocks	2
Chapter 3	Engineering Properties of Rocks	2
Chapter 4 Mid-Term Exam I	Topographic Maps	1
Chapter 5	Historical Geology and Geologic Maps	2
Chapter 6 Mid-Term Exam II	Structural Geology	2
Chapter 7	Construction Materials and Subsurface Geology	3
Chapter 8 Final Examination	Site Selection	1

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis. No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Geology for Civil Engineers by A.C. Mclean and C.D. Gribble, Unwin Hyman.
- Hoek, E. and Bray, J.W. (1981). Rock Slope Engineering (3rd edition). Institution of Mining and Metallurgy, London.
- Fookes, P.G. and Higginbottom, I.E. (1975). The classification and description of near-shore carbonate sediments for engineering purposes. Geotechnique, 25. 406-11.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: surveying	**Course code**: 0670261
Course Level: 2th year	**Course prerequisite(s):** 250102
Lecture Time: Sec 2 :12:10 to 13:00 Sun., Tues., Thurs. Sec 3 : 8:10 to 9:00 Sun , Tues , Thurs .	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hrs	E-mail
Adnan Abdelhadi	Lecturer	301	11:00- 12:00 Sun,Tues, Thurs.	adnan_m_abdelhadi@yahoo.com

Course module 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.

Course module objectives & outcomes:

- Understand the Principle of surveying
- Make mapes and lay out feature
- Run a leveling net work

- Determine the coordinates of points
- Use the survey instruments
- Calculate the areas and volumes
- Run a traverse survey
- set out horizontal and vertical curves.

Course/ module components:

- Books.
- support materials.
- Homework.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

- Quizzes
- Homework
- Final examination

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Home works & Project	**10%**
Quizzes	**10%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Subject	date	no of weeks
1-Introduction	19/10- 23/10	1
2- distance measurements	26/10 – 8/11	2
3- leveling	11/ 11 -16/11	1
4- contouring	19/11- 23/11	1
1st exam		
5- profiles and cross sections	26/11- 30/11	١
6- Angles measurements١	2/12 – 13/12	2
7- Traverse survey	16/12 -27/12	٢
2nd exam		
8- coordinates geometry	30/12 – 3/1	١
9- aras and volumes	6/1 -18/1	٢
10- route surveying	21/1 – 28/1	2

- **References:**
- **Foundamental of surveying , 3rd edition Molten O , S chmidt , Kam W wong**

- **Elementary surveying . 12th edition Galini and Wolf (USA 2008).**
- **Surveing principale andpractices, 5th edition , Nathenson,Lanzafama and Kissam,USA 2005**

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Structural Analysis I	**Course code:** 0670311
Course Level: 3rd year	**Course prerequisite(s):** 0670212
Lecture Time: Sec1: 8:10-9:00 Sun-Tue-Thu Sec2 : 12:45-2:15 Mon-Wed	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address and Course website
Eng. Abdallah Odeibat	Lecturer	301-A	As announced on office door	aodeibat@philadelphia.edu.jo http://www.philadelphia.edu.jo/academics/aodeibat/

Course module description:

Classification of structures; loads; truss analysis, internal loadings in structures, shear and moment diagrams for beams and frames; influence lines for determinate structures; deflections.

Course module objectives:

Provide a thorough understanding and practical applications of structural analysis theories. Develop the skills to analyze the behavior and response of structures to various loads and constraints. Establish foundation knowledge and skills in preparation for structural design, concrete and steel design.

After successfully completing this course, the students will be able to:

1. Analyze determinate structures (truss, beam and frame) under various loading conditions.
2. Determine internal loads (axial, shear and moment) in structural members using equilibrium and compatibility equations.
3. Determine reactions and internal loading in structural elements due to moving (dynamic) loads.
4. Employ deflection methods for calculation of deflection.
5. Demonstrate progress in problem solving skills and analytical thinking

Course/ module components:

Books (title, author (s), publisher, year of publication):

- Structural Analysis- 8th edition, by R.C Hibbeler, Pearson Prentice Hall; 2012.

Teaching methods:

Lectures, discussion groups, problem solving, etc.

Assessment instruments

- **Mid-Term Exams:** Two in-class exams will be given.
- **Quizzes & Assignments:** at least three quizzes and assignments will be given throughout the semester.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes & Assignments	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each one hour lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Course/module academic calendar

Course Academic Calendar		
Week	**Material to be covered**	**Notes**
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	**First Examination**
7-8	Chapter 4: Internal loadings in structural members	
10-11	Chapter 8: Deflections	
12-13-14	Chapter 9: Deflections using energy methods	**Second Examination**
15-16	Chapter 6: Influence lines for determinate structures	
	FINAL EXAMS	

Module references

Books

References	
1-	Structural Analysis by R.C Hibbeler , 8th edition

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
1st. Semester, academic year 2016-2017

Course syllabus

Course title: Structural analysis II	Course code: 0670312
Course level: 3rd. year	Course prerequisite: 0670311
Lecture time: 09:10-10:00 Sun., Thur. and Tus. For section 1 11:10-12:00 Sun., Thur. and Tus. for section 2 09:45-11:00 Mon., and Wed. for section 3.	Credit hours: 3 hrs.
Location: 6201	Contact hours: 2½ hrs.

Academic staff

Name	Rank	Office number and location	Office hours	E-mail adress
Dr. Wail Nourildean Al-Rifaie	Professor	211 Department of Civil Engineering	To be announced at the office door	wnrifaie@yahoo.com

Course description:
The course is intended to provide the student with a clear and through presentation of the theory and application of structural analysis as it applies to beams and frames.

Course objectives:
Developing the student's ability to both model and analyze the structure and to provide realistic applications encountered in the professional practice.

Course resources:

- Text book/ books (title, author(s), Publisher, year of publication):
  Structural Analysis
  by
  R.C.Hibbler
  7th. Ed. In SI Units.
  Publisher: Person, Prentic Hall.

Teaching methods:

Lectures
Tutorials
Problem solving

Learning outcomes:

- Knowledge and understanding:
  Students should be well versed in the classical methods of structural analysis.
- Cognitive skills (thinking and analysis):
  Applying these classical methods of structural analysis will develop a deeper understanding of the basic mechanics of materials.

Assessment instruments:

- Exams (First, Second, and Final Exam.).
- Quizzes.
- Homework assignments.

Allocations of Marks	
Assessment Instruments	Mark %
First examination	20
Second examination	20
Final examination	40
Quizzes, Homework	20
Total	100

Course academic calendar:

Week	Basic and support material to be covered	Reading assignment from text book
(1)	Introduction	
(2)	Flexibility (Force) method	Chapter 10
(3)		
(4)		
(5)	Slope deflection method	Chapter 11
(6) First examination		
(7)		
(8)	Moment distribution Method	Chapter 12
(9)		
(10)		
(11) Second examination		
(12)	Introduction to stiffness method of structural analysis	Chapter 14,15
(13)		
(14)	Plastic method of structural analysis	
(15)		
(16) Final examination		

Expected work load:

On average students need to spend 2 hours of study and preparation for each 50 minute lecture/ tutorial.

Attendance policy:

Absence from lectures and/ or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable and approved by the Dean of the Engineering college/ Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean , the student shall be considered to have withdrawn from the course.

Other education resources:

Books:

1. Norris C.H., and Wilbur J.B. “Elementary Structural Analysis”. New York: McGraw-Hill Book Company.
2. Jack McCormac. “ Structural Steel Design”. Harper Collins Publishers.

3. Wail N. Al-Rifaie and Ashok K. Govel. “Finite Element Method for Structural Engineers (A Basic Approach). John Wiley and Sons.
4. Lecture notes.

Philadelphia University
Faculty of Engineering
Department of Architecture
1st semester, 2016/2017

Course Syllabus

Course Title: Structural Mechanics and Analysis	Course code: 0670315
Course Level: 1	Course prerequisite (s) and/or corequisite (s): 210106
Lecture Time: Mon.-Weden. 9-45 to 11-15	Credit hours: 3

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr.Ghassan AL-Dulaimi	Associate Professor	311	6 Hours weekly	dr.ghassandulaimy@gmail.com

Course module 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.

Course module objectives:
1- To introduce students to force vector and their equilibrium to understand the effect of loading in the buildings.
2- To transfer students cognitive and imaginative thinking to visualize the needed structures to hold the different loading systems.
3- To upgrade students abilities to distinguish between different structural loadings and their points of weakness.
4- To provide students with means to analyze different structures and to choose the best system for their designs.

Course/ module components
The course consists of tow parts:
1- Statics
2- Mechanics of Materials and Structural analysis

The main purpose of this course is to provide the students with a clear and thorough understanding of the theory and the applications of the Statics and the engineering

mechanics of materials. This will allow the creation of their structural designs and improve the livability of their architectural creations.

- Books (title , author (s), publisher, year of publication)

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

- Support material: Students are advised to read and solve problems from any book about statics, strength of materials and structures.

- Homework: students are requested to solve specific number of problems as home works.

Teaching methods:

Lectures will be presented to students twice a week. A problem session will be held at every third meeting to collect the home work and solve it on the board.

Learning outcomes:

- Knowledge and understanding

The course will build the student ability to understand the acting forces, their points of application, equilibrium and resultant. Then it will create an understanding of the internal action of the applied forces on the structural material (stresses) and the resulting strains.

- Communication skills (personal and academic).

The Architectural students will be able to design communicate, read, use resources (books, magazine, web sites, etc.) related to the structures of buildings, interpret and explain their designs.

- Practical and subject specific skills (Transferable Skills).

The course will train architectural students and qualify them to analyze loading in structures, and to understand the internal stresses and strains. Then choosing the structures and their materials will be provided by the concrete or steel design course. Then this course is the base for a practical design.

Assessment instruments

- Acording to the following table:

Allocation of Marks	
Assessment Instruments	Mark
Year work and attendence	%20
First Exam	%20
Second Exam	%20
Final Exam	%40
Total	%100

Documentation and academic honesty

- Students are requested to illustrate references whatever extracted from books, magazine or web sites, in order to respect the copyright protection and avoid plagiarism.

Course/module academic calendar

The class meets Sunday, Tuesday and Thursday from 10-11 or from 11-12

Subject	Week	Homework/ due dates
- Force vectors	(1)	
- Force system resultants	(1)	
- Equilibrium of a Rigid body	(1)	
- Structural Analysis	(1)	
- Geometric Properties and Distributed Loadings	(1)	
- Internal Loading.	(1)	
-	First examination	
- stress and strain	(1)	
- Mechanical properties of materials	(1)	
- Axial load	(1)	
- Torsion	(1)	
- Bending	(1)	
- Transverse Shear	(1)	
-	Second examination	
- Combined loadings	(1)	
- Stress and Strain Transformation	(1)	
- Design of Beams	(1)	
- Buckling of Columns	(1)	
	Final Examination	

Expected workload:

On average students need to spend 10 hours weekly as a minimum to be able to solve the required problems.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

References

Books

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

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Pavement Design	**Course code: 0670323**
Course Level: 4rd year	**Course prerequisite(s): 0670211**
Lecture Time **Mon & Wed. : 14: 15-15:45**	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Ghassan Suleiman	Assistant Prof.	A-318	As shown on my office door	ghass_977@yahoo.com

Course module description:
This course is designed for civil engineering students in their fourth year. The course intends to give students a comprehensive idea about the pavement prosperities. The characteristics of soil , aggregate and bituminous materials and stress of pavements. Traffic loading (Vehicle gross weight , Equivalent axle load & Equivalent axle load). The design of flexible pavement(Imperial method & Mechanistic method) and deign of rigid pavement

Course module objectives:
The main objectives of this course are to :
1. Expose students to the characteristics of Highway materials.
2. Expose students to the methods of pavement deign.

Text Book:
AASHTO Guide for Design of Pavement Structures.
Principles of Pavement Design.
Traffic and Highway Engineering.

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments
- **Quizzes:** five Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes+ project	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Course Academic Calendar

No. of Lectures	Topics	Notes
2	Introduction of pavements types and characteristics of pavements	
6	Highway material:(soil, Aggregate and bituminous materials)	**Exam I**
6	Stress in rigid and flexible pavements	
5	Traffic loading (Vehicle gross weight , Equivalent axle load & Equivalent axle load)	**Exam II**
6	Flexible pavement design: • Structural component of a flexible pavement • General principle of flexible pavement design • Pavement design : Imperial method Mechanistic method Airport pavement design	
6	Rigid pavement design: • Types of rigid pavement • Materials used in rigid pavement • Joints in concert pavement • Thickness design of rigid pavement	
2	Climate conditions.	
2	Stabilization of soil	**FINAL EXAMS**

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: pavement Design	**Course code: 0670323**
Course Level: 4rd year	**Course prerequisite(s): 0670211**
Lecture Time **Sun., Tue. &Thu. : 10: 10-11:00** **Mon. &Wed. : 8:15 - 9:45**	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng.Amany Assouli	Lecture	A-301	As shown on my office door	Eng.amanyassouli90@yahoo.com

Course module description:
This course is designed for civil engineering students in their fourth year. The course intends to give students a comprehensive idea about the pavement prosperities. The characteristics of soil , aggregate and bituminous materials and stress of pavements. Traffic loading (Vehicle gross weight , Equivalent axle load & Equivalent axle load). The design of flexible pavement(Imperial method & Mechanistic method) and deign of rigid pavement

Course module objectives:
The main objectives of this course are to :
1. Expose students to the characteristics of Highway materials.
2. Expose students to the methods of pavement deign.

Text Book:
AASHTO Guide for Design of Pavement Structures.
Principles of Pavement Design.
Traffic and Highway Engineering.

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments
- **Quizzes:** five Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes+ project	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Course Academic Calendar

No. of Lectures	Topics	Notes
2	Introduction of pavements types and characteristics of pavements	
6	Highway material:(soil, Aggregate and bituminous materials)	**Exam I**
6	Stress in rigid and flexible pavements	
5	Traffic loading (Vehicle gross weight , Equivalent axle load & Equivalent axle load)	**Exam II**
6	Flexible pavement design: • Structural component of a flexible pavement • General principle of flexible pavement design • Pavement design : Imperial method Mechanistic method Airport pavement design	
6	Rigid pavement design: • Types of rigid pavement • Materials used in rigid pavement • Joints in concert pavement • Thickness design of rigid pavement	
2	Climate conditions.	
2	Stabilization of soil	**FINAL EXAMS**

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Geometric Design of Highway	**Course code: 0670324**
Course Level: 3 rd year	**Course prerequisite(s):** 0670261 Surveying
Lecture Time: 11:00 - 12:00	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Ghassan Suleiman	Ass. Prof.	A 318	10:00-11:00	ghass_977@yahoo.com

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.

Course Objectives:

To highlight the fundamental and mathematical concepts of highway geometric design and route location, to familiarize students with design and layout of horizontal and vertical curves, to design intersections and overcome special curve problems, and to attain superelevations and sight distances..

Text Book:

1- *Traffic and Highway Engineering* by **Nicholas J. Garber**, Laster A. Hoel, 4 ed.

2. *The Civil Engineering Hand Book,* second edition. W. F. CHEN, J.y. Richard Liew

Course/ module components:

- Books
- Support materials.

- Homework.

Teaching methods:
Lectures, examples and problems, video shows, learning programs related to this course like Civil 3D, etc.

Assessment instruments

- **Quizzes:** Three quizzes will be offered.
- **Exams :** First, Second and Final Exams
- **Project:** Project is an essential part of this course
- **Presentation.**
- **Homework assignments.**

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Project, Quizzes & Homework's	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty
- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar

Course Academic Calendar		
Lecture	**Subject**	**Notes**
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.	**Exam I (16-26/11)**
Week 6	- Setting out horizontal curves. - Curve widening.	
Week 7	7- Superelevation - Standards for superelevation. - Superelevation 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.	**Exam II (26/31-12)**
Week 12	- Vertical curve design.	
Week 13	11- Special facilities for heavy vehicle on steep grades: - Climbing lanes. - Emergency escape Ramps.	
Week 14	**Projects Presentation**	
Week 15	**Projects Presentation**	
Week 16	**FINAL EXAM (27/8-30/8)**	

Expected workload:

On average students need to spend 1 to 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall **not exceed 15%.** Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course. The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References:

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

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Geometric Design of Highway	**Course code: 0670324**
Course Level: 3 rd year	**Course prerequisite(s):** 0670261 Surveying
Lecture Time: 9:10 - 10:10 Sun., Tue & Thu. 11:15- 12:45 Mon. & Wed.	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng. Rajaa Hussein	Lecturer	A 301	10:00-11:00	rhussein@philadelphia.edu.jo

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.

Course Objective:

Furnish the students with basic understanding of choosing the best highway location and geometry design of various highway elements.

Text Book:

1- *Traffic and Highway Engineering* by **Nicholas J. Garber**, Laster A. Hoel, 4 ed.

2- ***The Civil Engineering Hand Book*** by W.F. Chen, J.Y. Richard Liew, 2 ed.

Course/ module components:

- Books
- Support materials.
- Homework.

Teaching methods:
Lectures, discussion groups, problem solving, learning programs like Civil 3D, etc.

Assessment instruments

- **Quizzes:** Three quizzes will be offered.
- **Exams :** First, Second and Final Exams
- **Project:** Project is an essential part of this course
- **Presentation.**
- **Homework assignments.**

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Project, Quizzes & Homework's	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar

Course Academic Calendar		
Lecture	**Subject**	**Notes**
Week 1	1-Basic principles 2-Road classification	
Week 2	3- Cross section elements: - Travel lanes. - Shoulders. - Medians. - Roadside barriers. - Side slopes.	
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	5- Characteristics of the Driver, the Pedestrian, the Vehicle, and the Road.	**Exam I (16/11-26/11)**
Week 6	6- Horizontal alignment: - Stopping sight distance on horizontal curves. - Simple circular curves. - Compound circular curves. - Reverse curve. - Transition curve.	
Week 7	- Setting out horizontal curves. - Curve widening.	
Week 8	7- Superelevation - Standards for superelevation. - Superelevation attainment.	
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. - Vertical curve design.	**Exam II (28/12-/1)**
Week 12	11- Special facilities for heavy vehicle on steep grades: - Climbing lanes. - Emergency escape Ramps.	
Week 13	12- Intersections & Interchanges	
Week 14	12- Intersections & Interchanges	
Week 15	**Projects Presentation**	
Week 16	**FINAL EXAM**	**(28/1-5/2)**

Expected workload:

On average students need to spend 2 to 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall **not exceed 15%.** Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References:

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

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Soil Mechanics	**Course code**: 0670331
Course Level: 3rd year	**Course prerequisite(s):** 0670231
Lecture Times: 8:10 to 9:00 Sun, Tue & Thu. (Sect. 1) 8:15 to 9:45 Mon. & Wed. (Sect. 2) 10:10 to 11:00 Sun, Tue & Thu. (Sect. 3)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Mohammed Al-Iessa	Associate Prof.	61-213	As announced on office door	mmalkaissi@yahoo.com

Course module 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.

Course module objectives & outcomes:

Students who successfully complete this course will be able to:

- Understand the origin of soil grains, types, sizes and their classification.
- Understand and calculate the basic properties of soil.
- Understand and calculate the fluid flow through soil (1-D).
- Understand the mechanism of stress distribution (geostatic and external) within a soil mass.
- Understand the principles of consolidation theory and be able to calculate the expected settlement.
- Understand the shear strength within a soil mass and be able to calculate the shear strength of a soil.

Course/ module components:

Books (title, author (s), publisher, year of publication):

- Soil Mechanics, SI Version, T.W. Lambe and R.V. Whitman, 2008, John Wiley & Sons, New York

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

- **Quizzes:** Five to Six Quizzes will be offered.
- **Project:** Project may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar

Item No.	Title	Weeks
1.	Introduction to soil mechanics	**2**
2.	Basic characteristics of soils	**2**
3.	Fluid flow through soil	**2**
4.	Stresses within a soil mass	**2**
5.	Shear strength of soils	**3**
6.	Consolidation and settlement	**3**

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Soil Mechanics, SI Version, T.W. Lambe & R.V. Whitman
- Craig's Soil Mechanics, 8th ed., J.A. Knappet & R.F. Craig
- Engineering Properties of Soils and their Measurements, J.E. Bowles

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Environmental Engineering	**Course code**: 0670343
Course Level: 3rd -4th year	**Course prerequisite(s):** 0212101
Lecture Times: 12:10 to 1:00 Sun, Tue & Thu. (Sect. 1)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Mohammad Younes	Assistant Prof.		As announced on office door	mohyoumoh@hotmail.com

Course module 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, solid and hazardous wastes, environmental remediation and environmental legislation.

.

Course module objectives & outcomes:
Students who successfully complete this course will be able to:

1. Understand mass balance and able to develop mass balance expression for contaminants/ materials under different case.
2. Understand water quality parameters and its application to characterize the different water sources
3. Understand the best available technologies for physical and chemical treatment of drinking water and wastewater.
4. Determine common air pollutants, and their pathways, and the various technologies available for control.
5. Characterize the solid and hazardous wastes, and understand the implemented methods to handle it from generation to final disposal including the 3R principles.
6. Understand selected contemporary global environmental issues such as environmental impact assessment, climate change and emerging contaminants.

Course/ module components:

Books (title , author (s), publisher, year of publication):

- Introduction to Environmental Engineering, Mackenzie Davis and David Cornwell, McGraw Hill, Fifth Edition, 2013.
- **Support material (s) (vcs, acs, etc).**

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

- **Home works, Short reports and presentations**: Reading related to current topic will be assigned every week. Assignments and other Homework (HW) will be given throughout the semester, focusing on the concepts learned from these readings.
- **Quizzes:** Three to Four Quizzes will be offered.
- **Project:** Project may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Home works & Project	**10%**
Quizzes	**10%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar

Item No.	Title	Weeks
1.	Fundamental Concepts and Overview	**1**
2.	Mass and Energy Balances	**1**
3.	water quality parameters	**3**
4.	Water and waste water treatment	**3**
5.	Air Pollution	**2**
6.	Solid and hazardous waste management	**2**
7.	Selected Contemporary Environmental Issues	**2**

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

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

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Environmental Engineering	**Course code: 0670343**
Course Level: 3-4 th year	**Course prerequisite(s): 0212101**
Lecture Time	**Credit hours:** 3

Academic Staff Specifics				
Name	**Rank**	**Office No.**	**Office Hours**	**E-mail Address**
Eng. Safa'a Idghaim			**As announced on my office door**	sidghaim@philadelphia.edu.jo

Course module description:

This course is designed to provide scientific skills and understanding of the key chemical, physical and biological processes appropriate for a practicing environmental engineer. Delegates will gain experience in practical analytical methods for assessing pollution of the natural environment (for example, river water quality) and engineered treatment systems (for example, wastewater treatment plants).

Delegates will acquire knowledge and understanding of the physical, chemical, biological sciences which underpin Environmental Engineering and sustainability of the environment.

Course Outline

- Water Chemistry Fundamentals (pH, Alk, B.O.D, etc.)
- Water Quality Standards
- Water and Regulations
- Micro - Pollutants

Philadelphia University
Faculty of Engineering
Civil Engineering Department

Text Books:

Environmental Engineering

Intended Knowledge Outcomes

Environmental Engineering is the integration of science and engineering principles to improve the natural environment, to provide healthy water, air, and land for human habitation and for other organisms, and to remediate pollution sites. Furthermore it is concerned with finding plausible solutions in the field of public health, such arthropod-borne diseases, implementing law which promotes adequate sanitation in urban, rural and recreational areas.

It involves waste water management and air pollution control, recycling, waste disposal , radiation protection, industrial hygiene, environmental sustainability, and public health, issues as well as a knowledge of environmental engineering law. It also includes studies on the environmental impact of proposed construction projects.

Awareness of global, regional and local environmental issues, international protocols and the principles of sustainability

An understanding of the key components of aqueous, terrestrial and gaseous environments and their interaction with pollutants

A practical knowledge of important analytical tools for monitoring and assessing pollution of water, air and solids

Knowledge of ecosystem management in the context of European Directives and UK Regulations

Intended Skill Outcomes

Proficiency in laboratory analytical techniques for standard analysis water and wastewater samples

Ability to calculate and express experimental data in standard units

Ability to source relevant reference data and water quality standards, make comparisons with analytical data, draw relevant conclusions, and prepare technical laboratory reports.

Ability to work individually and in teams, plan work and produce deliverable outputs on time.

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university “Academic Dishonesty/Cheating Policy”.

Module references Books

Environmental Engineering- Mackenzie L. Davis, David A. Cornel

Philadelphia University
Faculty of Engineering
Civil Engineering Department

Course Academics Calendar		
Week	**Subject**	**Notes**
1	**Introduction** What is Environmental Engineering Environmental system overview Source water, pollution reasons(water and air	
2,3	**Water Treatment:** Introduction, Coagulation, Softening, Reactions Mixing and Flocculation, Sedimentations, Filtration. Disinfection , Absorption, Water plant waste management , source water and chemistry and physics.	
4,5	**Water Quality Management** Water pollution and their sources, water chemistry, water quality management to rivers, water quality management in lakes, and underground water including wells. What is pH? The pH scale measures how acidic or basic a substance is. Reactive Chemicals. Acid rain, Fossil fuels.	
6,7	**Waste Water Treatment** Wastewater microbiology, Characteristics of domestic wastewater, on-site disposal system, municipal	
7,8	**wastewater treatment system** disinfection, land treatment, advanced wastewater treatment, sludge treatment and disposal, review and problems	
9,10	**Air pollution** Physical and chemical fundamentals, air pollutants and standard effects of air pollution, origin and fate of air pollution, micro and macro air pollution, air pollution meteorology, Air pollution control of stationary, and of mobile sources, review and problems	
11,12	Properties of air and selected chemicals	

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
Summer Semester, 2016-2017

Course Syllabus

Course Title: Fluid Mechanics	**Course code: 0670381**
Course Level: 3rd year	**Course prerequisite(s): 0670211**
Lecture Time **Sun.- Mon.-Thu.:** 9:10-10:00 , 11:10-12:00 , 12:45-14:15	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr.Ghassan AL-Dulaimi	**Associate Prof**	**311**	**As shown on my office door**	**dr.ghassandulaimy@gmail.com**

Course module 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.

Course module objectives:
The main objectives of this course are to :
1. To be familiar with the fluid mechanics basic conservation laws: continuity, momentum, and energy principles.
2. Expose students to the basic principles of pipe and open channel flows.
3. Expose students to the methods of dimensional analysis.

Course outcomes
At completing this module the student should be able to:
1. Students capable of connecting principles learned in other courses of solid mechanics, dynamics and physics to fluids.
2. Student learned the basic conservation laws as applied to typical problems of pipe and open channel flows.
3. Students exposed to the methods of similarity and they are capable of using them to certain problems of pipe and open channel flows.

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments
- **Quizzes:** Three Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Course Academic Calendar

No. of Lectures	Topics	Notes
4	Introduction, fluid definitions and its various	
7	Principle of fluid static	**Exam I**
7	Flow concepts and conservation of mass principle	
6	Pressure variation and Bernoulli's equation	**Exam II**
8	Momentum principle	
8	Energy principle	
2	Dimensional analysis	**FINAL EXAMS**

- References

Text Book: Fluid Mechanics; Russell C. Hibbeler, Pearson, 2014

- 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., (9^{th} Edition).

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus	
Course code: 0670441	**Course Title:** Hydraulics
Course prerequisite(s): Fluid Mechanics 760381	**Course Level:** 3-4 th year
Credit hours: 3	**Lecture Time:**

Academic Staff Specifics				
E-mail Address	**Office Hours**	**Office No.**	**Rank**	**Name**
sidghaim@philadelphia.edu.jo	**As announced on my office door**			Eng. Safa'a Idghaim

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), Similitude in Engineering, Pumps, Turbines.

TEXT BOOKS:

- Fundamentals of Hydraulic Engineering Systems, Hwang & Houghtalen. 4th Edition, 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 AIMS:

The main objectives of this course is to provide the student with a clear and through the presentation of the theory and application of Hydrualics as it applies to pipes, pumps, water distribution networks and open channels. This course will build on topics covered in Dynamics and mainly in Fluid Mechanics.

COURSE INTENDED LEARNING OUTCOMES:

- An ability to design, and analyze and interpret data
- An ability to design a Hydraulics system, its components, or process to meet required design values.
- An ability to function on multi-disciplinary teams
- A knowledge of contemporary issues in Hydraulic Engineering.
- An ability to use the techniques, skills, and modern engineering tools necessary for hydraulic system practices.
- An ability to identify, formulate, and solve Hydraulic problems.

COURSE OUTLINES:

Weeks	TOPIC	READING
1	**INTRODUCTION (REVISION)** Definitions, Properties of Water, water pressure, Water pressure and pressure forces.	Chapter (1,2)
2,3,4	**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)
5,6,7,8	**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)
9,10	**WATER PUMPS** Centrifugal, Propeller and Jet Pumps, Pump Selection, Pumps in Parallel or in Series, Specific Speed and Pump Similarity.	Chapter (5)

11,12,13, 14	**WATER FLOW IN OPEN CHANNELS** Classifications of Open Channel Flow, Uniform Flow ,Hydraulic Efficiency of Open Channel Sections, Energy Principles in Open Channel Flow, Hydraulic Jumps.	Chapter (6)

A allocation of Marks	
Mark	**Assessment Instruments**
20%	1st examination
20%	2nd examination
20%	Quizzes
40%	Final Examination:
100%	Total

DOCUMENTATION AND ACADEMIC HONESTY

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

ETHICS AND DISABILITY ACT:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

EXPECTED WORKLOAD:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

ATTENDANCE POLICY:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Reinforced Concrete 1	**Course code**: 0670411
Course Level: 3rd year	**Course prerequisite(s):** 0670312
Lecture Time: 8:10 to 9:00 Sun., Tue. and Thurs. (Sec. 1)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Saad Ali AlTaan	Professor	61-210E	As Announced on office door	saad.altaan@yahoo.com

Course module description:
The main purpose of this course is to provide the student with an introduction on the properties of concrete and steel, allowable stress design, cracked and uncracked sections, strength design, stress block, singly and doubly reinforced sections, rectangular sections, T-sections and other shapes, design for bending, shear design, bond requirements, development length, one-way and ribbed slabs, approximate methods for two-way slabs, short columns.

Course module objectives & outcomes:
Students who successfully complete this course will be able to:

- Allowable stress design, cracked and uncracked sections
- Analyze and design reinforced concrete beams of any shape subjected to flexure,
- Design for shear,
- Bond requirements, development length and splicing of reinforcement,
- One-way and ribbed slabs,
- Approximate methods for two-way slabs, and
- Short columns.

Course/ module components:
Books (title, author (s), publisher, year of publication):

- Design of Reinforced Concrete, Ninth Edition, J. C. McCormac and R. H. Brown, John Wiley and Sons, 2014.
- Design of Concrete Structures, 15th Edition, D. Darwin, and C. W. Dolan, and A. H. Nilson, McGraw-Hill, 2016.

Teaching methods:
Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments
Evaluation of students' performance (final grade) will be based on the following categories:

- **Mid-Term exams:** Two one-hour in-class exams will be conducted during the semester.
- **Quizzes:** Six (10-15 minutes each) quizzes will be offered during the semester, these quizzes will cover material discussed during the previous two weeks of lectures.
- **Home works and Project:** Six to seven Home works will be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks. The final examination will cover all the class material discussed during the semester.

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination – Mid term	**20%**
2nd examination – Mid term	**20%**
Quizzes and home works	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
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Course/module academic calendar:

CHAPTER	TITLE	WEEKS
Chapter 1	Properties of concrete and steel	1
Chapter 2	Allowable stress design, cracked and uncracked sections	1
Chapter 3	Flexural analysis using the strength design method	3
Chapter 4 **Mid Term Exam. I**	Flexural design using the Strength design method	2
Chapter 5	Design for shear	2
Chapter 6 **Mid Term Exam. II**	Development length and splicing of reinforcement	2
Chapter 7	One-way and ribbed slabs	1
Chapter 8	Approximate methods for two-way slabs	1
Chapter 9	Short columns	2
Final Examination		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Design of Concrete Structures, 15th Edition, D. Darwin, and C. W. Dolan, and A. H. Nilson, McGraw-Hill, 2016.
- Reinforced Concrete Mechanics and Design, 6th Edition, J. K. Wight and J. G. Macgregor, Pearson, 2012.
- Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary, ACI Committee (318-11), Farmington Hills, MI, 2011, 480 pp.
- Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, ACI Committee (318-14), Farmington Hills, MI, 2014, 530 pp.
- Standard Method of Detailing Structural Concrete, A manual for best practice, Third Edition, the Institution of Structural Engineers and the Concrete Society, United Kingdom, 2006.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: REINFORCED CONCRETE I	**Course code**: 670411
Course Level: 4th Year	**Course prerequisite(s):** 670312
Lecture Time: 9:45 – 11:15 (Mon, Wed)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng. Abdallah Odeibat	Lecturer	301-A	As announced on office door	aodeibat@philadelphia.edu.jo http://www.philadelphia.edu.jo/academics/aodeibat/

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

Prerequisite by Topics:

- Structural analysis of determinant and indeterminate structures,
- Drawing shear force and bending moment diagrams in beams,
- Determination of bending and shear stresses in beams,
- Computation of elastic deflection in beams.

Course learning objectives:

Students completing this course successfully will be able to

- Recognize the importance of building codes.
- Understand the design process.

- Establish a clear understanding of the mechanical behaviors of reinforcing steel, concrete and reinforced concrete members.
- Understand the limit states of a reinforced concrete structure and recognize the importance of each limit state.
- Understand the basic principles to properly apply the ACI provisions.
- Understand the flexural behavior of reinforced concrete beams, investigate and design beams for bending and shear.
- Understand mechanism of bond transfer, development length and anchorage of reinforcement and provide detailing of reinforced concrete beams.
- Determine the immediate and long term deflections in reinforced concrete beams; apply ACI provisions for crack and deflection control.

Text(s) and Other Course Materials

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

2. ACI Code (ACI 318 M -11).

Teaching methods:

Lectures, discussion groups, problem solving, etc.

Assessment instruments:

- **Mid-Term Exams:** Two in-class exams will be given.
- **Assignments:** Assignments will be given throughout the semester**.**
- **Quizzes:** Quizzes will be offered.
- **Final examination**.

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Homework	**10%**
Quizzes	**10%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university “Academic Dishonesty/Cheating Policy”.

Expected workload:

On average students need to spend 2 hours of study and preparation for each lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Weeks	Basic and support material to be covered	Reading Assignment from Textbook	Note
1	Introduction, Reinforced concrete and building codes.	Chapter 1	
1	Materials, Concrete, Strength of concrete, stress-strain relationship, durability of concrete and reinforcement	Chapter 2	**First Examinatio (/-/)**
4	Flexural analysis and design of reinforced concrete beams, analysis and design of one way slabs	Chapter 3	
3	Shear and diagonal tension in beams.	Chapter4	
1.5	Bond, Anchorage and development lengths	Chapter5	**Second Examinati (/-/)**
1.5	Design of one-way slabs	Chapter 13	
4	Short Columns	Chapter8	
	FINAL EXAMS		

References

Books

- Reinforced Concrete: A Fundamental Approach, Edward G. Nawy, 6th Edition, 2009, Prentice Hall.
- Design of Reinforced Concrete by J. C. McCormac and R.H. Brown, 8th Edition, John Wiley & Sons.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Reinforced Concrete 2	**Course code**: 0670412
Course Level: 3rd year	**Course prerequisite(s):** 0670411
Lecture Time: 10:10 to 11:00 Sun., Tue. and Thurs. (Sec. 1) 9:45 to 11:15 Mon. and Wed. (Sec. 2)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Saad Ali AlTaan	Professor	61-210E	As Announced on office door	saad.altaan@yahoo.com

Course module description:

The main purpose of this course is to provide the student with a continuation of the topics that are covered in Reinforced Concrete 1 like serviceability, design for torsion, design of slender columns, design of two way-slabs using the direct method, design of two way-slabs using the equivalent frame method, and design of stairs.

Course module objectives & outcomes:

Students who successfully complete this course will be able to:

- Check the serviceability of reinforced concrete beams and one-way slabs.
- Estimate the probable short-term and long-term deflection of beams and one-way slabs.
- Estimate the probable width of flexural cracks in beams and one-way slabs.
- Design reinforced concrete beams of any shape subjected to combined shear and torsion.
- Distinguish the short and long columns and design slender columns.
- Design two-way slabs using the direct or the equivalent frame method.
- Design different types of stairs.

Course/ module components:

Books (title, author (s), publisher, year of publication):

- Design of Reinforced Concrete, Ninth Edition, J. C. McCormac and R. H. Brown, John Wiley and Sons, 2014.
- Design of Concrete Structures, 15th Edition, D. Darwin, and C. W. Dolan, and A. H. Nilson, McGraw-Hill, 2016.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc…

Assessment instruments

Evaluation of students' performance (final grade) will be based on the following categories:

- **Mid-Term exams:** Two one-hour in-class exams will be conducted during the semester.
- **Quizzes:** Six (10-15 minutes each) quizzes will be offered during the semester, these quizzes will cover material discussed during the previous two weeks of lectures.
- **Home works and Project:** Six to seven Home works will be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks. The final examination will cover all the class material discussed during the semester.

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination – Mid term	**20%**
2nd examination – Mid term	**20%**
Quizzes and home works	**20%**
Final Examination	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar:

CHAPTER	TITLE	WEEKS
Chapter 1	Ultimate strength versus unified design approaches, tension- and compression-controlled members, strain limits.	1
Chapter 2	Serviceability analysis, deflection and cracking control.	2
Chapter 3	Analysis and design for torsion.	2
Chapter 4 **Mid-Term Exam I**	Slender columns.	2
Chapter 5	Analysis of building frames, simplifications, and idealization	1
Chapter 6 **Mid-Term Exam II**	Two-way slabs, direct design method.	3

Chapter 7	Two-way slabs, equivalent frame method.	3
Chapter 8	Design of stairs	2
Final Examination		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Design of Concrete Structures, 15th Edition, D. Darwin, and C. W. Dolan, and A. H. Nilson, McGraw-Hill, 2016.
- Reinforced Concrete Mechanics and Design, 6th Edition, J. K. Wight and J. G. Macgregor, Pearson, 2012.
- Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary, ACI Committee (318-11), Farmington Hills, MI, 2011, 480 pp.
- Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, ACI Committee (318-14), Farmington Hills, MI, 2014, 530 pp.
- Standard Method of Detailing Structural Concrete, A manual for best practice, Third Edition, the Institution of Structural Engineers and the Concrete Society, United Kingdom, 2006.

Philadelphia University-Jordan
College of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus				
Course Title: Steel Design			**Course code**: 0670413	
Course Level: 4th year			**Course prerequisite(s):** Structural Analysis	
Lecture Times: 9:45 to 11:45 Mon. & Wed. (Sect. 1) 11:10 to 12:00 Sun, Tue & Thu. (Sect. 2)			**Credit hours:** 3	
Academic Staff Specifics				
Name	**Rank**	**Office No.**	**Office Hours**	**E-mail**
Dr. Bashar Behnam	Assistant Prof.	312	As announced on office door	bbehnam@philadelphia.edu.jo

Course objectives & outcomes:
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, columns, tension and compression members and their connections.
After successful completion of this course the student will be able to: Be familiar with the AISC Steel Construction Manual, 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, analyze and design steel tension members, analyze and design steel compression members, analyze and design steel beams, and design structural steel simple connections using bolting or welding.

Course Components:
Textbook: W.T., Segui, "Steel Design", Cengage Learning, 5th edition, 2012.

Design Code: AISC Steel Construction Manual, 14th edition, 2011.

References:

1- C.G., Salmon, J.E. Johnson, F.A., Malhas, "Steel Structures Design and Behavior", Prentice Hall, 5th edition, 2009.
2- American Institute of Steel Construction. "Detailing for Steel Construction". AISC/NSD, 3rd edition, 2009.
3- American Society of Civil Engineers. 2010. "Minimum Design Loads for Buildings and Other Structures". ASCE/SEI 7-10. Reston, VA.

Grading Policy

Requirement	Weight
Exam I	20%
Exam II	20%
Quizzes	20%
Final Exam	40%
Total	100 %

Classroom Expectations:
You are expected to attend class, participate, and take notes. You are not to disrupt the learning of other students (i.e. having side conversations, text messaging, etc.) as to achieve a welcoming classroom environment for all. **No cell phones are to be visible during any of the exams**.

Topics to Cover:

1	Review	0.5 Week
2	Chapter One: Introduction	0.5 week
3	Chapter Two: Concept in Structural Steel Design	1 Week
4	Chapter Three: Tension Members	3 Weeks
5	Chapter Four: Compression Members	3 Weeks
6	Chapter Five: Beams	3.5 Weeks
7	Chapter Seven: Simple Connections	2.5 Weeks

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis. No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

The instructor reserves the right to modify the time and contents of the course to satisfy the needs and abilities of the class.

-Good Luck-

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Steel & Concrete Structures	**Course code:** **0670416**
Course Level: 4th year	**Course prerequisite(s):** **0670315**
Lecture Time: Sec1: 10:10-11:10 Sun., Tues. &Thurs.	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address and Course website
Eng. Abdallah Odeibat	Lecturer	301-A	As announced on my office door	aodeibat@philadelphia.edu.jo http://www.philadelphia.edu.jo/academics/aodeibat/

Course module 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.

Course module objectives:

Provide a thorough understanding and practical applications of Reinforced Concrete and Steel structures design theories.

Course/ module components:

- Lecture notes adopted from ACI318-11 code and AISC.

Teaching methods:

Lectures, discussion groups, problem solving, etc.

Assessment instruments

- **Mid-Term Exams:** Two in-class exams will be given.
- **Quizzes and homeworks:** at least three quizzes will be given throughout the semester.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**

Homeworks	**10%**
Quizzes	**10%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Course/module academic calendar

Course Academic Calendar		
Week	**Material to be covered**	**Notes**
1	Introduction	
2	Classification of structures and loads	
3 & 4	Analysis of statically determinate structures (equilibrium, superposition and determinacy)	
5	Behavior of R.C beams in Flexure	**First Examination (16/11- 24/11)**
6	Flexure design of Rectangular beams	
7	Shear design of R.C beams	
8	Design of solid and ribbed slabs	
9&10	Design of short columns	
11	Calculations of development length	**Second Examination (21/12- 2/1)**
12	Introduction to steel-materials	
13 & 14	Design of tension members	
14 & 15	Design of Compression members	
16	**FINAL EXAMS** (28/1-5/2)	

PhiladelphiaUniversity
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Transportation and Traffic Engineering	**Course code**: 670421
Course Level: 4th Year	**Course prerequisite(s): 670324**
Lecture Time: 13:00-14:00	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Ghassan Suleiman	Ass. Prof.	A 318	12:00-13:10	ghass_977@yahoo.com

Course module description:
Concepts, fundamental parameters of traffic (Speed, volumes, density, time headway, gap and follow-up time and examples); capacity analysis of signalized and unsignalized intersections; capacity analysis of basic freeway segments, two-lane highways, and multilane highways.

Course module objectives:
Understanding of choosing the best transportation planning, fundamental parameters of traffic flow, capacities and level of services of various road elements.

Text Book:

1- ***Traffic and Highway Engineering*** by Nicholas J. Garber, Laster A. Hoel, 4 ed.

2. ***The Civil Engineering Hand Book*****, second edition.** W. F. CHEN, J.y. Richard Liew

Course/ module components:
- Books
- Supportmaterials.
- Homework.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, video show, field measurements, learning programs like Synchro, SIDRA … etc.

Assessment instruments:

- Quizzes.
- Homework.
- Exams: First. Second & Final exams.
- Projects and presentation

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Project , Homeworks & Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar:

week	Basic and support material to be covered		Note
(1)	Introduction to traffic engineering		
(2)	Fundamental of traffic parameters		
(3)			
(4)			
(5)	Review of driver-vehicle-roadway characteristics		
(6)	Transportation modes		**First Examination (16-26/11)**
(7)			
(8)	Highway capacity and level of service	Two lane Highway	
(9)		Multilane highways	
(10)		Freeway	
(11)	Intersection, design, and control	Unsignalized intersections	
(12)		Unsignalized intersections	
(13)		Signalized intersections	
(14)		Signalized intersections	Roundabouts
(15)		Roundabouts	
(16)		Roundabouts	
(17)	Pedestrians facilities		
(18)	**Project Presentation**		
	FINAL EXAMS (27/8 -30/8)		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.
The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Module references:

- Highway Capacity Manual 2000, **HCM**, Transportation Research Board, National Research Council.
- Traffic Engineering by Roger P. Roess, Elena S. Prassas, William R.McShane, 4 ed.
- A Policy on Geometric Design of Highway and Streets, fourth edition, 2001. American Association of State Highway and Transportation Officials "**AASHTO** ".

PhiladelphiaUniversity
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Transportation and Traffic Engineering	**Course code**: 670421
Course Level: 4th Year	**Course prerequisite(s): 670324**
Lecture Time: 11:10-12:10 Sun., Tue. & Thu. 8:15-9:45 Mon. & Wed.	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng. Rajaa Hussein	Lecturer	A 301	10:10-11:10	rhussein@philadelphia.edu.jo

Course module 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) .

Course module objectives:
Understanding of choosing the best transportation planning, transportation models, fundamental parameters of traffic flow, capacities and level of services of various road elements.

Text Book:
1- ***Traffic and Highway Engineering***by Nicholas J. Garber, Laster A. Hoel, 4 ed.

2- ***The Civil Engineering Hand Book*** by W.F. Chen, J.Y. Richard Liew, 2 ed.

Course/ module components:
- Books
- Supportmaterials.
- Homework.

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, video show, field measurement, learning programs like Synchro, SIDERA…etc.

Assessment instruments:

- Quizzes.
- Homework.
- Exams: First. Second & Final exams.
- projects and presentation

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Project , Homeworks& Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar:

week	Basic and support material to be covered	Note
(1)	Introduction to traffic engineering	
(2)	Fundamental parameters of traffic	
(3)	Fundamental parameters of traffic	
(4)	Review of driver-vehicle- roadway characteristics	
(5)	Highway Capacity & level of service	**First Examination (16/11-24/11)**
(6)	- Two lane highway	
(7)	-Multilane highways	
(8)	-Freeway	
(9)	Unsignalized intersections	
(10)	Signalized intersections	**Second Examination (21/12-2/1)**
(11)	Signalized intersections	
(12)	Roundabouts	
(13)	Traffic Studies	
(14)	Traffic Studies	
(15)	**Project Presentation**	
(16)	**Final Exam**	**(28/1- 5/2)**

Expected workload:

On average students need to spend 2 to 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.
The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Module references:

- Highway Capacity Manual 2000, **HCM**, Transportation Research Board, National Research Council.
- Traffic Engineering by Roger P. Roess, Elena S. Prassas, William R.McShane, 4 ed.
- A Policy on Geometric Design of Highway and Streets, fourth edition, 2001. American Association of State Highway and Transportation Officials "**AASHTO** ".

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Sanitary Engineering	**Course code**: 0670443
Course Level: 4th year	**Course prerequisite(s): 0**670343
Lecture Times: 10:10 to 11:00 Sun, Tue & Thu. (Sect. 1) 9:45 to 11:15 Mon. & Wed. (Sect. 2)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Mohammad Younes	Assistant Prof.	312	As announced on office door	mohyoumoh@hotmail.com

Course module description:
Sources of water , Population estimation, water demand and type of waste water, hydraulic of sewage systems and design principles, water distribution systems, physical, biological and chemical water quality. Reactor and reactor engineering, 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.

Course module objectives & outcomes:
Students who successfully complete this course will be able to:

1. Determine up to dated knowledge of water quality parameters and its application in water and wastewater treatment.
2. Understand the main concepts of water engineering design .
3. Understand the best available technologies for physical, chemical and biological treatment of wastewater.
4. Determine common water pollutants, and their pathways, and the various technologies available for control.

Course/ module components:

Books (title , author (s), publisher, year of publication):

- Water and Wastewater Technology, 6th Edition, Mark J. Hammer & Mark J. Hammer Jr., Prentice Hall, 2007.
- **Support material (s) (vcs, acs, etc).**

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

- **Home works, Short reports and presentations**: Reading related to current topic will be assigned every week. Assignments and other Homework (HW) will be given throughout the semester, focusing on the concepts learned from these readings.
- **Quizzes:** Three to Four Quizzes will be offered.
- **Project:** Project may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Home works & Project	**10%**
Quizzes	**10%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
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Course/module academic calendar

Item No.	Title	Weeks
1.	Fundamental Concepts and Overview	**1**
2.	Water demand and wastewater generation	**2**
3.	Water distribution	**3**
4.	wastewater collection	**2**
5.	Water treatment (physical and chemical)	**3**
6.	Biological wastewater treatment	**3**

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

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.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Engineering Economy	**Course code: 0670472 / 0670471**
Course Level: 4th year	**Course prerequisite(s): 0210106**
Lecture Time: 08.10 – 9:00 Sun/ Tues/Th. **11:15—12:45 Mon, Wed.**	**Credit hours: 3 Cr. new / 2 Cr. old**

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Othman Aldmour	**Lecturer**	**311**	**09:00 – 10 :00** **11:00—12:00** **Sun/Tues.** **10:00- 11.00** **Mon./Wed**	**Othman.mm1@gmail.com**

Course module description:

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.

Course module objectives& outcomes:

This module is intended to mainly provide information and aspects on Engineering Economy. Examples of these are feasibility study, cash flows, time value of money, interest rates and alternatives evaluation.

At Completing this module the student should be able to:

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

Text Book:

Engineering Economy, by *Leland T. Blank and Anthony J. Tarquin,* WCB/McGraw-Hill, 6th Edition, 2005

Construction Accounting and Financial Management, by Steven J. Peterson, Second Edition

Assessment instruments

- **1st& 2nd Exam :**(20 marks each).
- **Assignments/Activities:** Some Assignments will be given throughout the semester And Attendance,(10 marks)**.**
- **Quizzes:** Five Quizzes will be offered (2 marks each).
- **Final examination**: 40 marks

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes, Home works, Quizzes, Attendance.	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- ❖ Students may consult with one another on solutions, but copying another student's work is strictly prohibited.
- ❖ Students should write their own work.
- ❖ The Instructor follows general university "Academic Dishonesty /Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Module references Books:

References	
1-	Sullivan, William G., Wicks, Elin M., and James T. Luxhoj, Engineering Economy, (Upper Saddle River: Prentice-Hall, 2003, Twelfth Edition)

Course Academic Calendar			
Week	**Subject**	**Start on:**	**Notes**
1	The Principles of Engineering Economy The Role of Engineering Economy	17/10/2016	
2	The Process of Decision Making, Cash Flow, Using Time Lines, Time Value Money, Compounding and Future Value.	24/10/2016	
3	Discounting and Present Value, Annual Percentage Rate (APR) Making Interest Rates Comparable, Impact of Interest Rates on PV, Comparing Loans using EAR	31/10/2016	
4	UNIFORM-SERIES PRESENT-WORTH FACTOR, UNIFORM-SERIES CAPITAL-RECOVERY FACTOR, COMPLEX CASH FLOWS	07/11/2016	
5	Uniform (arithmetic) gradient cash flows	14/11/2016	
			1st Exam
6	INFLATION AND CONSTANT DOLLAR, Simple Loans, Long-Term Loans.	21/11/2016	
7	Depreciation, STRAIGHT-LINE METHOD, SUM-OF-THE-YEARS	28/11/2016	
8	Depreciation, STRAIGHT-LINE METHOD, SUM-OF-THE-YEARS	05/12/2016	
9	Analysis of Financial Statements	12/12/2016	
10	Tools for Making, Financial Decisions, Financial Ratios.	19/12/2016	
			2th Exam
11	Tools for Making, Financial Decisions, **SUNK COSTS** MARR (MINIMUM ATTRACTIVE RATE OF RETURN)	26/12/2016	
12	Tools for Making, Financial Decisions, NET PRESENT VALUE OR PRESENT WORTH, INCREMENTAL NET PRESENT VALUE	02/12/2016	
13	Tools for Making, Financial Decisions, FUTURE WORTH, ANNUAL EQUIVALENT	09/01/2016	
14	Tools for Making, Financial Decisions, RATE OF RETURN, INCREMENTAL RATE OF RETURN	16/01/2016	
15	Tools for Making, Financial Decisions , PAYBACK PERIOD WITHOUT INTEREST, PROJECT BALANCE	23//2016	
16	**Final exam**	To be announced later	Final Exam

Philadelphia University-Jordan
College of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus				
Course Title: Prestressed Concrete			**Course code**: 0670517	
Course Level: 5th year			**Course prerequisite(s):** Reinforced Concrete II	
Lecture Times: 9:45 to 11:45 Sun. Tue. & Thu.			**Credit hours:** 3	
Academic Staff Specifics				
Name	**Rank**	**Office No.**	**Office Hours**	**E-mail**
Dr. Bashar Behnam	Assistant Prof.	312	As announced on office door	bbehnam@philadelphia.edu.jo

Course objectives & outcomes:

- 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.
- The various topics include prestressing systems, flexural behavior using actual material constitutive relationships; shear analysis and design using advanced approaches; behavior of members subjected to combined loadings; serviceability requirements including prestress loss, and deflection and ductility.

Course Components:

Textbook:

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.

Grading Policy

Requirement	Weight
Exam I	20%
Exam II	20%
Quizzes	20%
Final Exam	40%
Total	100 %

Classroom Expectations:

You are expected to attend class, participate, and take notes. You are not to disrupt the learning of other students (i.e. having side conversations, text messaging, etc.) as to achieve a welcoming classroom environment for all. **No cell phones are to be visible during any of the exams**.

Topics to Cover:

1. Basic Concepts.
2. Materials and System for Prestressing.
3. Losses of Prestressing.
4. Flexural Analysis and Design at ultimate.
5. Shear Strength Design.
6. Compression Members.
7. Deflection. (as time permits)

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.
The student is responsible for all assignments on a weekly basis. No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

The instructor reserves the right to modify the time and contents of the course to satisfy the needs and abilities of the class.

-Good Luck-

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Railway and Airport Engineering	**Course code:** 0670522
Course Level: 5th year	**Course prerequisite(s): 0670421**
Lecture Time **Sun. ,Tue. &Thu.:** 08:10-09:00 **Mon. & Wed. :** 11:15-12:45	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng.Amany Assouli	Lecture	A-301	As shown on my office door	Eng.amanyassouli90@yahoo.com

Course module 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

Course module objectives:

Knowledge of :

1. Natural of civil aviation
2. Characteristics of aircraft related to airport design.
3. Lightening systems for runway and taxiway.
4. Understanding the necessity of railways.
5. Classification of railways and system of railways
6. Expose students to the methods of pavement deign.

Text Book:
Robert Horonjeff, Francis X.Mckeley.William J. Sproule Seth B. Young “planning and Design of Airports” Fifth edition ,2010.

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments

- **Quizzes:** Three Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes + project	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
- **Ethics and Disability Act:**
  - Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
  - Students should write their own code. Using code found on books or internet is prohibited.
  - The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course/module academic calendar

Course Academic Calendar

No. of weeks	Topics	Notes
1	Introduction to transportation system	
1	Nature of civil aviation and airports.	
1	Aircraft characteristics related to airport design.	
1	Runway characteristics and configuration	**Exam I**
2	Taxiway and Taxi lanes and Aprons	**Exam II**
2	Lightening systems for airports utilities	
1	Introduction of railway	
1	Discuss student projects	
	Final Exam	

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Foundation Engineering	**Course code**: 670531
Course Level: Forth Year	**Course prerequisite(s):** soil mechanics, fluid mechanics, solid mechanics
Lecture Times 9:10 – 10 and 11:10 – 12 Sun. Tues. Th	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. F. A. Al-Jumaily	Prof.	214	As announced on my office door	fouad_ecg@yahoo.com

Course module 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 and earth retaining structures.

Course academic calendar

Number of weeks that required to cover each topic is:

Topic	Duration (wks)
Review of some related fundamentals	2
Site investigations	2
Lateral earth pressures	1
Slope stability	1
Bearing capacity and settlement	3

Design of shallow foundations 3

Design of earth retaining structures 2

Total 14 wks

Course module objectives & outcomes:

At the end of the course a successful student will be able to;

- Interpret subsurface information to propose material properties.
- Select appropriate models and analysis methodologies for rang of foundation engineering problems.
- Perform the geotechnical engineering design for shallow foundations
- Perform the geotechnical engineering design for earth retaining structures.

Teaching methods:

Lectures , discussion and solving of problems

Assessment instruments

- Home works, Short reports and presentations:
- Quizzes:
- Project:
- Final examination:

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Home works & Project	**5%**
Quizzes	**15 %**
Final Examination:	**40%**
Total	**100%**

Documentation style

The students will be given the key solution after each quiz and examination to compare with their answers.

Any student query will be respected and discussed

Ethics and Disability Act:

Student may consult with one another on solution, but copying another student's code is strictly prohibited.

Students should write their own code. Using code found on books or internet is prohibited.

The Instructor follows general university “Academic Dishonesty / Cheating Policy “

Expected workload:

On average, students need to spend two hours of study and preparation for each lecture

(50 minutes).

Attendance policy:

Absence from lectures and / or tutorial shall not exceed 15%. Students who exceed this limit without acceptable excuse shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignment on a weekly basis.

No-make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instruct[s] approval.

References

1- Bowles J.E., "Foundation Analysis and Design"
McGraw-Hill

2- Tomlinson M.J., "Foundation Design and Construction"
A pitman International Text

3- Teng W.C., "Foundation Design"
Prentice – Hall

- Das B.M., "Principles of Foundation Engineering"٤
Cengage Learning

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Hydrology	**Course code: 0670541**
Course Level: 4rd year	**Course prerequisite(s): 0212101**
Lecture Time **Sun. ,Tue. &Thu.:** 9:10-10:00 & **Mon, Wed** 11:15-12:45	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Monther Alawneh	Assistant Prof	61 - 105	Sun Tue Thu 10:00 – 11:00	Dr_alawneh@yahoo.com

Course description:
Hydrological cycle, precipitation, evaporation, seepage, infiltration and percolation, ground water hydrology, ground water movement and methods of usage, surface water, Water sources, Watershed physical characteristics, hydrograph analysis, flood analysis, hydrological prediction.

Course goals:
This course introduces the basic information and skills of hydrological system analysis. Skills include modeling of hydrological systems. You will be trained to apply procedures to different problem statements, emphasizing the engineering approach to problem solving.

Text Book: Title: **Engineering Hydrology**
Author: Chow.

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments

- **Quizzes:** Three Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.
-

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university “Academic Dishonesty/Cheating Policy”.

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor’s approval.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Liquid and Solid Waste	**Course code**: 0670545
Course Level: 4th -5th year	**Course prerequisite(s): 0**670443
Lecture Times: 12:45 to 14:15 45 Mon. & Wed. (Sect. 1)	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Mohammad Younes	Assistant Prof.	312	As announced on office door	mohyoumoh@hotmail.com

Course module 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.

Course module objectives & outcomes:
Students who successfully complete this course will be able to:

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

Course/ module components:

Books (title , author (s), publisher, year of publication):

- 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

- **Support material (s) (vcs, acs, etc).**

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Assessment instruments

- **Home works, Short reports and presentations**: Reading related to current topic will be assigned every week. Assignments and other Homework (HW) will be given throughout the semester, focusing on the concepts learned from these readings.
- **Quizzes:** Three to Four Quizzes will be offered.
- **Project:** Project may be offered as part of this course. Detailed topics and schedule will be announced in due course.
- **Final examination**: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Home works & Project	**10%**
Quizzes	**10%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university "Academic Dishonesty/Cheating Policy".

Course/module academic calendar

Item No.	Title	Weeks
1.	Fundamental Concepts and Overview	**1**
2.	Solid waste characterization (physical and chemical)	**2**
3.	Integrated solid waste management processes	**6**
4.	Solid waste disposal and landfill design	**3**
5.	Hazardous waste management and treatment	**2**

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

References

- Waste Management Practice, 2^{ed} edition., John Pichtel, CRC Press
- Hazardous Waste Management, International Edition 1994, La Grega, P. Buckingham and J. Evans. Mc Graw Hill

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Special Topics in Civil Engineering: Building Construction	**Course code: 0670553**
Course Level: 5rd year	**Course prerequisite(s): 0670531**
Lecture Time **Sun. ,Tue. &Thu.:** 11:10-12:00	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr. Monther Alawneh	Assistant Prof	61 - 105	Sun Tue Thu 10:10 – 11:00	Dr_alawneh@yahoo.com

Course description:
This course covers the types of building, constructional elements in building, loads types of stairs, formwork, floors, plastering and painting, isolation, drawing civil engineering details including: brick and stone walls, retaining walls, earth works, steel structures, concrete structures.

Course goals:
This course introduces the basic information and skills of Building Construction. You will be trained to apply procedures to different problem statements, emphasizing the engineering approach to problem solving.

Text Book:

Teaching methods:
Lectures, problem solving, etc.

Assessment Instruments
- **Quizzes:** Three Quizzes will be offered.

A allocation of Marks

Assessment Instruments	Mark
1st examination	**20%**
2nd examination	**20%**
Quizzes	**20%**
Final Examination:	**40%**
Total	**100%**

Documentation and academic honesty
- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Ethics and Disability Act:

- Students may consult with one another on solutions, but copying another student's code is strictly prohibited.
- Students should write their own code. Using code found on books or internet is prohibited.
- The Instructor follows general university “Academic Dishonesty/Cheating Policy”.

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor’s approval.

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016/2017

Course Syllabus

Course Title: Project Management	**Course code:**0670571
Course Level: 5th year	**Course prerequisite(s):** 0670412
Lecture Time: 9:10 – 10: 10, 11:10-12:10, 13:10-14:10 Sun/Tue/Thu	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Dr.Atef Issa	Assistant Professor	61=210-B	10:00 – 11:00, 12:00-13:00 Sun. /Tue./Thu	atefissa1961@hotmail.com

Course module description:
Planning, project management concepts, network analysis using arrow techniques network analysis. Overlapping networks, project monitoring, project control, time- cost trade off.

Course module objectives& outcomes:
This module mainly is intended to provide information and aspects on construction project management.

At Completing this module the student should be able to:

1. Determine the role of project managers.
2. Plan the work: perform WBS, estimate activity duration, and establish relationships among the project activities.
3. Perform network analysis and scheduling calculations.
4. Optimize the plan: perform time-cost tradeoff
5. Evaluate the project status
6. Perform earned value analysis to control schedule and cost variances.
7. Estimate equipment cost, productivity and production cost
8. Understand Quality management
9. Understand Risk Management

Text Book:

Construction Management Fundamentals / Knutson, Schexnayder, Fiori and Mayo. 2009
Construction management: principles and practice / Alan Griffith and Paul Watson. 2004

Assessment instruments

- **1stExam :**(10 mark).
- **2nd Exam :**(20 mark).
- **Quizzes, Homework's, Attendance**. Quizzes/ Homework / Attendance/ and coursework project (30 marks).
- **Final examination**: (40 marks)

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	**20%**
2nd examination	**20%**
Quizzes/ Homework / Attendance/ and coursework project	**20%**
Final Examination:	**40%**
Total	**100%**

- **Ethics and Disability Act:**
  - ❖ Students may consult with one another on solutions, but copying another student's work is strictly prohibited.
  - ❖ Students should write their own work.
  - ❖ The Instructor follows general university "Academic Dishonesty / Cheating Policy".

Expected workload:

On average students need to spend 2 to 3 hours of study and preparation for each 75-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.
The student is responsible for all assignments on a weekly basis.
No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

Course Syllabus
Attendance policy:

Course Academic Calendar			
Week	**Subject**	**Start on:**	**Notes**
1, 2	Introduction, Define Projects and Project Management, The need for Construction Management, What is PMBOK. Gide ,Understand the main components of projects, Fundamental Components of PM. Projects Review	16/10/2016	
3, 4	Critically analyses and apply the different phases of the project Life Cycle, Project planning and scheduling, Activity duration &Direct Cost Projects Review		
5, 6	Techniques of Project Planning and control, using Critical Path Method (CPM),), Activity on Arrow Method, (AOA) . Techniques of Project Planning and control, using Resource Allocation, Managements Techniques		
		16-24/11/2016	1st Exam
7, 8, 9	Techniques of Project Planning and control, using Resources, Time- Cost Tradeoffs, (Crashing) and using the Program Evaluation and Review Technique (PERT)		
10, 11	Project Monitoring and control, using the Mechanics of Comparing Actual Work With Planned Work Effort. Project Monitoring and control Cost and Schedule Variation, (Earned Value Analysis)		
		21/12/2016 2/1/2017	2nd Exam
12	Quality Management& Risk Management,[Types of risk, Methods of handling Risk], Review		
13	Projects presentation		
14	Projects presentation **Final exam**	To be announced late 28/1/2017-5/2/2017]	Final Exam

Module referencesBooks

References	
1-	Modern Construction Management / Frank Harris and Ronald McCaffer, 6th ed, 2006

Philadelphia University
Faculty of Engineering
Department of Civil Engineering
First Semester, 2016-2017

Course Syllabus

Course Title: Specifications, Contracts, and Quantity Surveying	**Course code: 0670572**
Course Level : 5th year	**Course prerequisite(s):** 0670412 Reinforced Concrete (2)
Lecture Time: sec 1 : 8:15 – 9:45 Mon, Wed. Sec 2 : 10:10 – 11:00 Sun, Tues, Thurs.	**Credit hours:** 3

Academic Staff Specifics

Name	Rank	Office No.	Office Hours	E-mail Address
Eng.Adnan Abdelhadi	Lecturer	301	11:00 – 12:00 Sun, Tues & Thurs.	And\an_m_abdelhadi@yahoo.com

Course module 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.

Course objectives:

To provide an introduction to the role of quantity surveying in within the client's specifications and understand contracts, budgets, quantities and measurements.

Text Book:

١. داود خلف ، " العقود والمواصفات وحساب الكميات " ، الطبعة الثالثة ، جمعية عمال المطابع التعاونية ، عمان ، الاردن ، ١٩٩٩ .

2. Conditions of contracts for construction, Federation International des Ingenious–Consoles (FIDIC).
دفتر عقد المقاولة الموحد للمشاريع الانشائية (فيديك ١٩٩٩)

Teaching methods:

Lectures, PowerPoint presentation, discussion groups, problem solving, mini project etc.

Assessment instruments

- **Two examinations**
- **Quizzes and homework (mini project)**
- **Final examination**

A allocation of Marks	
Assessment Instruments	**Mark**
1st examination	20%
2nd examination	20%
Homework's, attendance, quizzes/ and mini project.	20%
Final examination	40%
Total	100%

Expected workload:

On average students need to spend 2 to 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall **not exceed 15%.** Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

The student is responsible for all assignments on a weekly basis.

No make-up will be given for missed quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

- **Ethics and Disability Act:**
  - ❖ Students may consult with one another on solutions, but copying another student's work is strictly prohibited.
  - ❖ Students should write their own work.
  - ❖ The Instructor follows general university "Academic Dishonesty / Cheating Policy".

Course outlines:

1- Introduction to course.
2- Contract Documents.
3- Contract Types.
4- Contract Reporting.
5- Quantity surveying
6- Types of Quantity Surveying.
7- Units, Dimensions, Measurements.
8- Itemization of Building Works.
9- Taking off estimate
10- Bill of quantities and prices

Module references Books

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.