Philadelphia University

Faculty of Engineering and Technology
Department of Mechanical Engineering

Course Details:

Title:	Fluid Mechanics lab (**620429**)
Prerequisite:	Fluid Mechanics II (**620428**)
Credit Hours:	1 credit hours (14 weeks per semester, approximately 28 contact hours)
Textbook:	1.Laboratory manuals 2.Fluid Mechanics; Russell C. Hibbeler, Pearson, 2014
References:	Engineering fluid mechanics, Roberson J.A., and Crowe C.T, John Wiley and sons., (9th Edition).
Course Description:	The course focuses on performing experiments on; density and viscosity of fluids, center of pressure on submerged plan surface, impact of water jet, fluid meter in incompressible flow Pipe flow, characteristics of a Single Centrifugal Pump, coupling of two identical pumps in series, coupling of two identical pumps in parallel and Pump Cavitation.
Instructor:	Eng. Esraa AL-hyasat **Email**: ehyasat@philadelphia.edu.jo **Office**: Civil Engineering building, room 205, ext: 2556

Course Outlines:

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

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

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

Assessment Guidance:

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

Teaching methodology: Online, Blended or both

Electronic platform: Microsoft-teams

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

Grading policy:

Mid-term Exam.	30%
Home works, Quizzes and participation	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 14 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the

deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.