



## Annual Course Report

Program on which this course is given:	Diploma of Applications of Automatic Control of Mech. Power Systems
Department offering the program:	Mechanical Power Engineering Department - ACC control Lab
Department offering the course:	Mechanical Power Engineering Department - ACC control Lab
Academic Level:	Elective Course-1 <sup>st</sup> or 2 <sup>nd</sup> Term of the Diploma of Graduate Studies
Date	2 <sup>nd</sup> Term 2014/2015
Semester (based on final exam timing)	<input type="checkbox"/> Fall <input type="checkbox"/> Spring <input checked="" type="checkbox"/> Summer

### A - Basic Information

1. Title:	<b>Applications of Industrial Pipe lines: Types, Design, Construction, Installation &amp; Maintenance</b>						Code:	<b>MEP 579</b>		
2. Units/Credit hrs per week:	Lectures	3 Credit hours per week	Tutorial	--	Practical	--	Total	3		
3. Names of lecturers contributing to the delivery of the course:										
• Associate Professor Dr. Mohsen S. Soliman										
4. Course coordinator:	Associate Professor Dr. Mohsen S. Soliman				External evaluator:	NA at this time				

### B- Statistical Information (for Summer 2013/2014)

See the Next Tables for all Grades and statistics for the last summer term 2013/2014

كلية الهندسة - جامعة القاهرة - قسم هندسة القوى الميكانيكية دبلوم تطبيقات التحكم الأوتوماتيكي في نظم القوى الميكانيكية نتيجة الفصل الدراسي الثاني للعام الأكاديمي 2013 / 2014 (حسب اللانحة القديمة)											
رقم الطالب	انتقال الحرارة والكتلة	مق 579	مق 566 تطبيقات متقدمة للدوائر الهيدروليكية في نظم التحكم الأوتوماتيكي	مق 564 استخدام PLC وتكنولوجيا المعلومات في نظم التحكم الآلي	مق 563 استخدام المعامل الافتراضية في تحليل نظم التحكم الأوتوماتيكي	عدد الفصول الدراسية	إجمالي الساعات المكتسبة	مجموع النقاط الكلية	المعدل التراكمي	التقدير	الحالة
1	C	B+	A	B	B	2	24	72.9	3	B	مستمر
2	C	B	B	B	B-	2	24	61.2	2.6	C+	مستمر
3		A-	A	A-	B+	2	24	86.1	3.6	B+	مستمر
4	----	----	----	----	----	2	12	34.2	----	----	غياب
5		A-	B+	A-	B+	2	24	81.9	3.4	B+	مستمر
6		B+	A-	B	B	2	24	78.9	3.3	B+	مستمر
7	----	----	----	----	----	2	12	39.9	---	----	غياب
8	----	A-	A	B	B	2	24	76.2	3.2	B	مستمر
9	----	B+	B+	B+	B+	2	24	73.2	3	B	مستمر
10	C+	B+	----	B+	B	1	12	35.7	3	B	مستمر
11	A-	A-	----	A-	A-	1	12	44.4	3.7	A-	مستمر
12	C	B	----	B+	B	1	12	33.9	2.8	B-	مستمر
13	----	----	----	A-	A	1	6	23.1	3.9	A-	مستمر

### C- Professional Information

#### 1. Course Teaching:

• Topics actually taught	No. of hrs	Lecture	Tutorial/ Practical	Lecturer
<i>Introduction and Basic Concepts:</i> Fundamental Aspects of Fluid Flow in Piping Systems, Types and components of Pipe-Networks, Review of some Hydraulic considerations, Major and Minor Losses in Piping Systems, Various Types of Pipe Fittings, Solved Examples. <i>Piping System Design and Calculations:</i> Many Practical Cases and Numerical	36 hrs	3 hrs/ week for 12 weeks	---	Associate Professor Dr. Mohsen S.



Solved examples. <i>Using Computer Software in design of Piping systems:</i> Many Practical programs. <i>Types of industrial Valves</i> (basic functions, selections: hydraulic considerations, construction, ratings, materials, Flow through valves, pressure losses, design facts/parameters - Manual Valves (types, selection, connections, operation) - Check Valves (types, selection, design and installation factors)-Reducing and Pressure Relief Valves (direct acting, characteristics) - Automatic Control Valves (spool types, single/multi-stage controls)- Valve Maintenance -Examples for automatic Valves. <i>Various Types of Flow Meters. Water Hammer in Piping systems.</i>	before the final term exam	Soliman
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• Topics taught as a percentage of the content specified:  >90%     70-90%     <70%

• Reasons in detail for not teaching any topic:

- Reducing the number of weeks/ Semester for many social and political reasons.

- Many mandatory vacations as per requirements of the university management. The term is only 12 weeks.

• If any topics were taught which are not specified, give reasons in detail: Non

2. Teaching and Learning Methods:

Lectures	Practical/ Training	Seminar/ Workshop	Class Activity	Case Study	Projects	Laboratory	E-learning	Assignments /Homework	Other: Submitting reports
(√)	( )	( )	(√)	(√)	( )	( )	(√)	(√)	

If teaching and learning methods were used other than those specified, list and give reasons: Non

3. Student Assessment:

Method of Assessment	Percentage of total
-All in-term works, sheets, and Reports	30%
-Final-term formal, written Examination	70%
-Total	100%

• Members of Examination Committee: Associate Professor Dr. Mohsen S. Soliman & Assistance Professor Dr. Amro Abdel-Raouf

• Role of external evaluator: Review program ILOs

4. Facilities and Teaching Materials:  Totally adequate     Adequate to some extent     Inadequate

List any inadequacies:

Classes are not totally suits the Multi-Media Facilities  
Classroom has no white screen for the data show and it needs more ventilation fans.

### 5. Exams/ILOs Matrix

#### • ILOs/Evaluation Source Matrix

ILOs	Source of Evaluation									
	Assignments	Quizzes	Experiments	Lab Exam	Midterm Exam	Projects	Term Papers/Reports	Final Exam	Others 1	Others 2
❖ Knowledge and Understanding ❖ Intellectual Skills ❖ Professional and Practical Skills ❖ General and Transferable Skills										
<b>a) Knowledge and Understanding:</b> -Fundamental Aspects of Pipe-Lines, Types and components of Piping Systems, Review of Hydraulic considerations, Major and Minor Losses in Piping Systems. -Types of Pipe line Fittings, Piping System Design and pipe-networks calculations problems. -Using Computer Software & numerical calculation methods in design & analysis of Piping systems.										



<p>-Types of industrial Valves (functions, selections: hydraulic considerations, construction, ratings, materials, Flow through valves, pressure losses, design facts/parameters-Manual Valves (types, selection, and operation). -Hydraulic &amp; Pneumatic control valves (Pressure, Directional, check), and Types of Flow Meters. -Water Hammer Problems in Pipe lines.</p>	√	√	-	-	-	-	√	√	-	-
<p><b>b) Intellectual Skills:</b> -Select and apply appropriate technical and optimum method in doing engineering design and analysis of automatic control problems. -Searching for scientific information and adopting automatic control self-E-learning capabilities. -Analyze &amp; compare component effects, performance, and efficiency of different pipe linesystems. -Apply the concept of using software for design, simulation, analysis, diagnostics &amp; operation of various types of pipe line systems and networks. -Compare between various types of pipe linesystems and networks components, and parts. - Apply scientific and engineering analysis for pipe linesystems and networks.proportional &amp; Servo hydraulic circuits/systems.</p>	√	√	-	-	-	-	√	√	-	-
<p><b>c) Professional and Practical Skills:</b> -Identify several types of automatic control problems in pipe line systems and networks which are essential for the design and operation of mechanical power systems and energy transfer processes. -Perform professional design and modelling for automatic control problems of pipe linesystems and networks. -Suggest possible alternative solutions for various types of components for automatic control problems in pipe linesystems and networks . -Diagnose efficiency and performance of different types of automatic control circuits/systems in pipe linesystems and networks. - Analyze different types of automatic control problems in pipe line systems and networks.</p>	√	√	-	-	-	-	√	√	-	-
<p><b>d) General and Transferable Skills:</b> Having successfully completed this course, the student should have the ability to do: -Perform engineering assembly of different pipe line system fittings and networks components in one control system. -Transfer knowledge, Work in group and Communicate in written and oral forms, in English. - Use IT &amp; evolutionary technological tools &amp; PC applications (Excel, Mat lab, Virtual labs, .etc). - Prepare &amp; write reports, Manipulate &amp; sort data, Think logically, and continuous self-E-learning. -Identify practical problems and compare between different technologies used for pipe linesystems and networks. -Organise &amp; manage time &amp; resources effectively; for short-term and longer-term commitments.</p>	√	√	-	-	-	-	√	√	-	-

- Midterm Exam: No Midterm Exam for graduate studies programs



Question	ILOs									
	1	2	3	4	5	6	7	8	9	10
1. (problem 1)										
2. (problem 2)										

• Final Exam:

Different parts of the ILOs are evaluated adequately through-out various part of the final exam

Question	ILOs									
	1	2	3	4	5	6	7	8	9	10
1. (problem 1)	√	√	√							
2. (problem 2)			√	√	√					
3. (problem 3)					√	√	√	√		
4. (problem 4)							√	√	√	√
5. (problem 5)								√	√	√

6. Administrative Constraints: Reducing the number of the weeks per semester

▪ List any difficulties encountered:

- Reducing the number of weeks/ Semester for many social and political reasons
- Many mandatory vacations as per requirements of the university management. The term is only 12 weeks.

7. Comments from external evaluator(s):	Response of Course Team
Not available in writing for instructors to respond to	None
8. Comments from Students:	Response of Course Team
Done but not available in writing for instructors to respond to	None
9. Course Enhancement:	

Progress on actions identified in the previous year's action plan:

Action	State whether or not completed and give reasons for any non-completion
Upgrading Teaching facilities Supply visual aids for the classrooms Maintenance of classrooms	Not completed due to administrative problems
10. Action Plan for Academic Year 2014 – 2015	

Actions Required	Completion Date	Person Responsible
Upgrading Teaching facilities Supply visual aids Maintenance of classrooms Incorporate more practical materials & measurement experimental labs in the course Make a Mat lab programs to illustrate the basic ideas of each topic with graphs	End of 2015	Administration and Members of The Examination Committee
Course Coordinator:	Associate Professor Dr. Mohsen S. Soliman	
Signature:		