



**Course Specifications of:
Project MEP 590**

Program(s) on which the course is given: Diploma in Mechanical Power Engineering
(Pumping and Pipe Networks Engineering)

Compulsory or Elective element of program:

Department offering the program: Mechanical Engineering / Power

Academic year / Level: year/ 2014/2015

Date of specification approval: 2012

A. Basic Information

Title: Experiments on Pumps

Credit Hours: 3

Tutorial: **Practical:**

Code: MEP 590

Lecture: 3

Total: 3

B- Professional Information

1- Overall aims of course:

1. Provide a fundamental background in pipe line components.
2. Convey the principles and practice for the design of pipe lines
3. Establish the physical principles and practical techniques most important to engineering applications in mechanical engineering.

2- Intended learning outcomes of course (ILOs)

- 2.1.1 Review theories, fundamentals and specialized knowledge in mechanical engineering.
- 2.1.2 Outline the scientific developments in mechanical engineering.

2.1 Knowledge and understanding

- a1 Identify theories, fundamentals and specialized knowledge of pumping engineering and piping networks and categorize sciences related to professional practice. (2.1.1)
- a2 List ethical and legal principles of professional practice in pumping engineering and piping networks area. (2.1.2)
- a3 Current problems, in pumping engineering and piping networks field, being treated in a critical and evaluative manner. (2.1.3)
- a4 Explain the effect of professional practice on the environment and work towards its conservation and maintenance. (2.1.4)
- a5 Demonstrate methodologies and computer tools available for analysis, design and operation of pumping engineering systems and piping networks. (2.1.5)



Course Specification- Diploma. (2014-2015)

2.2 Intellectual skills

- b1 Discern and analyze the pumping engineering and piping networks problems in both a systematic and a creative way. (2.2.1)
- b2 Solve theoretical and practical problems in pumping engineering and piping networks. (2.2.2)
- b3 Critically and analytically read research papers and topics related to pumping engineering and piping networks. (2.2.3)
- b4 Assess the risks and hazards in professional practices. (2.2.4)
- b5 Make sound decisions in complex and unpredictable situations. (2.2.5)

2.3 Professional and practical skills

- c1 Apply professional skills to solve problems in pumping engineering and piping networks. (2.3.1)
- c2 Prepare professional reports. (2.3.2)
- c3 Plan and implement experiment design and evaluate testing. (2.3.3)

2.4 General and transferable skills

- d1 Communicate effectively using different means with different audiences. (2.4.1)
- d2 Use information technology to model performance using specialized software packages in order to serve the development of professional practice. (2.4.2)
- d3 Identify personal learning needs. (2.4.3)
- d4 Use different sources for obtaining information and knowledge. (2.4.4)
- d5 Work in a group and manage time effectively. (2.4.5)
- d6 Lead a team in familiar professional contexts. (2.4.6)
- d7 Conduct self-learning and continuous education practices. (2.4.7)

3- Contents

Topic No.	Topic	No. of weeks	Total no. of hours
1	Complete design of pipeline	27	108
	Total	27	108



Course Specification- Diploma. (2014-2015)

4- Course Matrix

ILO's code number	Teaching/learning methods and strategies	Assessment methods and strategies
2.1.1, 2.1.2 2.1.3 , 2.1.4	Formal lectures, seminars, tutorials, directed reading, project work and independent study.	Individual coursework assignments, quizzes, oral discussions and reports. Mid year and /or final written examination is given.
2.2.1, 2.2.2 , 2.2.3	Analysis and problem-solving skills are developed through tutorial/problem sheets and small group exercises. Research skills are developed through a small subject oriented research project.	Analysis and problem-solving skills are assessed through oral and written examinations. Design and research skills are assessed through project write-ups, coursework and project reports.
2.3.1 2.3.2	Experiments demonstrations, practical work, laboratory visits.	Practical skills are assessed through laboratory experimental write-ups, coursework exercises and reports, project reports and presentations.
2.4.1, 2.4.2	Those skills are not explicitly taught; however, along the course of study the student will acquire those skills to be able to perform his obligations. Attendance of seminars, workshops or conferences will help the student in developing those skills. Presentation by students (either group or individual) will train students for those skills.	Project presentation

5- Assessment schedule

Assessment 1	Assignments	on weeks	2, 6, 18,
Assessment 2	Quizzes	on weeks	4, 8, 12, 16
Assessment 3	Mid-term exam	on weeks	10
Assessment 3	Oral exam	on week	18
Assessment 4	Final exam	on week	20

6- Weighting of assessments

- 05% Home assignments
- 05% Quizzes
- 20% Mid-term examination
- 10% Oral examination
- 60% Final-term examination
- 100% Total



Course Specification- Diploma. (2014-2015)

7- List of References

7.1 Text books

- Fluid Mechanics, Frank M. White, Mcgraw-Hill College, 1998
- Turbomachinery: Design and Theory, Rama S.R. Gorla (Marcell Dekker), 2001
- pipe lines theory J. Pinches and John G. , First Edition, 1989 Prentice Hall International Ltd.

7.2 Recommended books; Periodicals & Websites.

- Yahoo mail group
- www.4shared.com
- www.sciencedirect.com

8- Facilities required for teaching and learning

Presentation board, computer and data show

Laboratory

Course coordinator Prof. Dr. Maged Ahmed Osman

Course instructor Prof. Dr. Ahmed Maged Ahmed Osman

Head of Department: Prof. Dr. Osama Ezzat Abdelltaif