



**Mansoura University
Faculty of Engineering**

Production and Mechanical Design Engineering Department

**Postgraduate Program Specifications
Master: Production Engineering**



Production and Mechanical Design Engineering Department
Postgraduate Program Specifications
M.Sc.: Production Engineering

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1 Basic Information

Department Offering the Program: **Production and Mechanical Design Engineering**

Program Title: **Production Engineering**

Field of Program: **Production Engineering**

Program Type: **Master**

Date of Curriculum Approval: **1984**

Language: English

Program Systems: Courses (One Year) + Thesis

Program Courses' Duration: 40 Weeks

Number of Courses: at least four courses + Technical English Language

Total Hours: depend on number of courses assigned

Credit Hours: Partial System, at least 200 hrs (50 hrs/Course)

Coordinator: Prof. Dr. Hassan Ali Mohamed Soltan

Internal Evaluator:

External Evaluator:

2. Professional Information

2.1 Program Vision, Mission and Aims

2.1.1 Program Vision

The program restrains a wide range of production practices that hold enough capability and flexibility to manufacture world class products and introduce high level plant services.

2.1.2 Program Mission

The program provides the graduates with all tools to introduce creative products and production processes with high end-user-value in addition to measure, analyze, and improve the product and process characteristics.

2.1.3 Program Aims

The program has several explicit and implicit aims. The main program aims, as correlated to its attributes (Table 1), are

1. Design and improve products and production processes.
2. Introduce innovative products and materials.

2.2. Attributes

The graduate of the master program must be able to

1. Master the basics and methodologies of scientific research with versatile use of its variable tools.
2. Apply the analytical approach and its use in the field of specialization.
3. Apply the specialized knowledge integrated with specialized engineering concepts related to the professional practice.
4. Show awareness of the ongoing problems and modern visions in the area of specialization.
5. Identify and solve engineering problems.
6. Master some professional skills and use of appropriate technological means to serve the professional practice.

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Coordinator: **Prof. Dr. Hassan Ali Soltan**

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7. Communicate and lead team works effectively.
8. Take good decisions in different professional aspects.
9. Employ available resources efficiently.
10. Adopt awareness of the detrimental impact of the engineer role on society and environment under the global and regional variables.
11. Display professional responsibilities and ethical, societal and cultural concerns.
12. Recognize the need to develop and engage in continuous learning.

Table 1. Aims/Attributes matrix.

At. Ai.	01	02	03	04	05	06	07	08	09	10	11	12
1												
2												

Attribute 5 is the most correlated and critical.

2.3. ILOS

2.3.1. (a) Knowledge and Understanding

With the completion of the master program, the graduate will have knowledge and understanding in

1. Theories, concepts and specialized knowledge of the learning area and also sciences appropriate to the professional practice.
2. Mutual influence between professional practice and its impacts on the environment.
3. Scientific developments in the field of specialization.
4. Moral and legal ethics of the professional practice in the area of specialization.
5. The concepts and principles of quality of the professional practice in the area of specialization.
6. The basics and ethics of scientific research.

2.3.2. (b) Intellectual Skills

With the completion of the master program, the graduate will be able to

1. Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems.
2. Solve specific problems on the basis of limited and contradictory information.
3. Demonstrate a high level of competence in the coordination of different sources of knowledge to solve professional problems.
4. Carry out a research study and/or writing a scientific methodology study on research problem.
5. Assess and analyze risks of the professional practice in the field of specialization.
6. Plan to improve performance in the field of specialization
7. Make career decisions in different professional aspects.



2.3.3. (c) Professional and Practical Skills

With the completion of the master program, the graduate will be able to

1. Apply modern and principle professional skills in the area of specialization.
2. Write and evaluate technical reports.
3. Adopt assessment methods and tools existing in the area of specialization.

2.3.4. (d) General and Transferable Skills

With the completion of the post graduate diploma program, the graduate will be able to

1. Communicate effectively in different aspects.
2. Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
3. Adopt self-assessment and specify his needs of personal learning.
4. Use different resources for information and knowledge.
5. Establish rules and indicators for assessing the performance of others.
6. Collaborate effectively within multidisciplinary team and lead teams in different professional contexts.
7. Demonstrate a high level of competence in the time management.
8. Continuous self-education.

2.4. Curriculum Contents

2.4.1. Program Contents

No.	Course	Code	Lecture
1	Material Technology	PRE4701	2hrs/week
2	Casting Technology	PRE4702	2hrs/week
3	Welding Technology	PRE4703	2hrs/week
4	Forming Technology	PRE4704	2hrs/week
5	Machining Technology	PRE4705	2hrs/week
6	Fine Measurements	PRE4706	2hrs/week
7	Design of Jigs and Fixtures	PRE4707	2hrs/week
8	Work Study and Measurements	PRE4708	2hrs/week
9	Design of Tools and Dies	PRE4709	2hrs/week
10	Production Planning and Control	PRE4710	2hrs/week
11	Engineering Economy	PRE4711	2hrs/week
12	Modeling of Production Systems	PRE4712	2hrs/week
13	Design of Production Lines	PRE4713	2hrs/week
14	Production Quality Control	PRE4714	2hrs/week
15	Computer Applications	PRE4715	2hrs/week
16	Research Seminar	PRE4716	2hrs/week

2.4.2. Teaching and Learning Methods

No.	Teaching Method
1	Lectures
2	Discussion meetings
3	Textbooks and periodical search

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2.4.3. Student Assessment

No.	Assessment Method	Weight	Weeks	ILOs
1	Final Examination	100%	42	a, b, c, d
2	Thesis	Pass	-	-

2.4.4. Program Matrix

No.	Course	Code	Aims	ILOS			
				Knowledge & Understanding	Intellectual Skills	Professional & Practical Skills	General & Transferable Skills
1	Material Technology	PRE4701	1,2	01,03,05	01,02,07	01,03	01,02,07
2	Casting Technology	PRE4702	1	01,03,05	01,02,07	01,03	01,02,07
3	Welding Technology	PRE4703	1,2	01,02,03	01,02,07	01,03	01,02,07
4	Forming Technology	PRE4704	1,2	01,03	01,02	01,03	01,02
5	Machining Technology	PRE4705	1,2	01,03	01,02,07	01,02,03	01,02
6	Fine Measurements	PRE4706	2	01,03	01,02	01,03	01,02
7	Design of Jigs and Fixtures	PRE4707	1,2	01,02,05	01,02	01,03	02,04,07
8	Work Study and Measurements	PRE4708	1	01,03	01,02	01,03	01,07
9	Design of Tools and Dies	PRE4709	1,2	01,03,05	01,02,07	01,02,03	01,04,07
10	Production Planning and Control	PRE4710	1	01,05	01,02,06	01,02,03	04,07
11	Engineering Economy	PRE4711	1	01,03	01,02	01,03	01,07
12	Modeling of Production Systems	PRE4712	1	01,05	01,06	01,03	02,04
13	Design of Production Lines	PRE4713	1	01,03	01,06,07	01,02,03	04,07
14	Production Quality Control	PRE4714	2	02,05	01,02	01,03	04,07
15	Computer Applications	PRE4715	1	01,03,05	01,02,03	01,03	02,04
16	Research Seminar	PRE4716	1	01,04,06	04,06	01,02	02,04

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Appendixes

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