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| *Course report of* |
| **Mechanics of Machines – MDP 212** |
| University: Ain Shams | Faculty: Engineering |

## Basic Information

1. Title and code:

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| **Mechanics of Machines – MDP 212** |

1. Program on which the course is given:

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| --- |
| Design and Production Engineering Program |
| Mechanical Power Engineering Program |
| Automotive Engineering Program |
| Mechatronics Engineering Program |

1. Year/Level of programs:

|  |
| --- |
| Junior |

1. Units/Credit Hours

|  |  |
| --- | --- |
| ( i ) Lecture : | 3 |

|  |  |
| --- | --- |
| ( ii ) Tutorial/ : | 3 |
| ( iii ) Practical | 1 |

|  |  |
| --- | --- |
| ( iv ) Total : | 7 |

1. Names of lecturers contributing to delivery of the course:

|  |  |
| --- | --- |
| i - | Prof. Taher G. Abu-El-Yazied  |

|  |  |
| --- | --- |
| ii - | Dr. Mohammed Mohammed Hedaya |

|  |  |
| --- | --- |
| Course coordinator: | Prof. Taher G. Abu-El-Yazied  |

|  |  |
| --- | --- |
| External evaluator: | --- --- --- |

## Statistical Information

|  |  |
| --- | --- |
| No. of students attending the course: | 217 |

## Professional Information

1. **Course Teaching:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Course Content** | **Lecture****Hours** | **Tutorial****Hours** |
| 1 | Introduction, definition, and Basics of mechanisms, Degrees of freedom, Types of mechanisms | **3** | **3** |
| 2 | Inversions of reciprocating engine, Inversions of double slider mechanism | **3** | **3** |
| 3 | Motor vehicle steering mechanism, Hook's joint. | **3** | **3** |
| 4 | Synthesis of mechanisms | **3** | **3** |
| 5 | Position analysis | **3** | **3** |
| 6 | Velocity analysis | **3** | **3** |
| 7 | Acceleration analysis | **3** | **3** |
| 8,9 | Force analysis | **6** | **6** |
| 10 | Flywheel | **3** | **3** |
| 11 | Cam analysis | **3** | **3** |
| 12 | Kinematic gear analysis | **3** | **3** |
| 13,14 | Representations, Euler angles, rotation matrix, homogeneous transformation matrix | **6** | **6** |
| 15 | Direct and inverse kinematics. | **3** | **3** |
| Total Number of Hours | **45** | **45** |

**Laboratory Activities:**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Week** | **Title of Experiment** | **Laboratory****Hours** |
| 1 | 1-3 | Construction  | 3 |
| 2 | 4-5 | Position Analysis | 2 |
| 3 | 6-9 | Velocity and Acceleration Analysis | 4 |
| 4 | 10-13 | Force Analysis | 4 |
| 5 | 14-15 | Gear Dynamics Analysis | 2 |
|  | Total Number of Hours | **15** |

**Topics taught as a percentage of the content specified:**

**>90 % 70-90 % <70%**

**X**

**X**

**Reasons in detail for not teaching any topic**

the shortening of this term limited the content.

**If any topics were taught which are not specified, give reasons in detail**

N/A………………………………………………………………………………………….

**Teaching and learning methods:**

**The teaching is done in online for lectures, and the tutorials most are in Campus and some interactive using Microsoft Teams platform. Labs are in Campus**

 Lectures: **X**

Practical training/ laboratory:  **X**

Seminar/Workshop:

Class Activity: **(Tutorials)**  **X**

**Lectures:**

[https://teams.microsoft.com/l/channel/19%3a0c76df0140e94cc0b961ae2c17dab198%40thread.tacv2/Lectures?groupId=cfaa24c8-2612-4f10-963a-333ea96b1bc9&tenantId=ad2a8324-bef7-46a8-adb4-fe51b6613b24](https://teams.microsoft.com/l/channel/19%3A0c76df0140e94cc0b961ae2c17dab198%40thread.tacv2/Lectures?groupId=cfaa24c8-2612-4f10-963a-333ea96b1bc9&tenantId=ad2a8324-bef7-46a8-adb4-fe51b6613b24)

**Tutorials:**

[https://teams.microsoft.com/l/channel/19%3ae0cf0e7f464f4ab99d85409ee03d345f%40thread.tacv2/Tutorial?groupId=cfaa24c8-2612-4f10-963a-333ea96b1bc9&tenantId=ad2a8324-bef7-46a8-adb4-fe51b6613b24](https://teams.microsoft.com/l/channel/19%3Ae0cf0e7f464f4ab99d85409ee03d345f%40thread.tacv2/Tutorial?groupId=cfaa24c8-2612-4f10-963a-333ea96b1bc9&tenantId=ad2a8324-bef7-46a8-adb4-fe51b6613b24)

1. **Student assessment:**

|  |  |
| --- | --- |
| **Method of assessment** | **Percentage of total** |
| Quizzes  | 10 % |
| Midterm | 15 % |
| Final examination | 60 % |
| Oral examination | 4% |
| Practical/laboratory work | 6 % |
| Other assignments/class work | 5 % |

**Members of examination committee**

 i –

|  |  |
| --- | --- |
|  - | Prof. Taher G. Abu-El-Yazied  |

|  |  |
| --- | --- |
|  | Dr. Mohammed Mohammed Hedaya |

**Facilities and teaching materials:**

Adequate to some extent

Inadequate

List any inadequacies:

 .More stable internet and teaching platform

1. **Administrative constraints:**

**There should be a stable internet for students and instructors.**

1. **Student evaluation of the course:**

**Response of Course Team**

The student evaluation is more than 50%. There are some comments of the lab and there is a plan to solve this issue. Some students have comments on the schedule, this due to the crash and vacations in the semester.

**Comments from external evaluator(s): Response of course team**