**Course Report for Fall Semester-2020**

**MEP-231 MEASUREMENT AND INSTRUMENTATION**

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| **Ain Shams University**  **Faculty of Engineering**  **Junior Mechanical** | AIN |

#### **Course Report**

**A- Basic Information**

**1. Title and code: Measurement and Instrumentation, MEP281**

**2. Program(s) on which this course is given: Mechatronics, Power, Automotive and Production Engineering**

**3. Year/ Level of programmes: Junior**

**4. Units/Credit hours: 2**

**Lectures:1 Tutorial:-- Practical: 3 Total: 4**

**5. Names of lecturers contributing to the delivery of the course**

Dr. Ahmed Nabil El-Sheemy

Course co-coordinator: Dr. Ahmed Nabil El-Sheemy

External evaluator N/A ……………………………

**B-1-Statistical Information**

No. of students attending the course: No: 397 100%

No. of students completing the course: No: 384 97%

**Results:**

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**C- Professional Information**

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| **Topics actually taught** | **No. of hours (Total)** | **Lecturer** |
| PerformanceCharacteristicsof measuringinstruments:calibration,fixed andrandomerrors, error estimation, sensitivity,linearity,dynamic characteristics. .Experiment(1): Statistical analysisoferrors. experiment (1):ProbabilityAnalysisofScattereddata | 11 | Dr. Ahmed Nabil El-Shimy |
| PressureMeasurements:mechanical pressuretransducers,manometers,  Elastic pressure measurements, electrical pressure transducers ,inductive transducers ,piezo-electric transducer, strain gauges. Experiments(2,3): Calibrationofpressuremeasuringdevice | 10 | Dr. Ahmed Nabil El-Shimy |
| Flow Measurements: orifice nozzles, venture ,turbine flow meters , magnetic flow meters, rota-meters ,positive displacement flow meters ,ultrasonic meters. Experiments (4,5):Calibrating DifferentKindsofflow MetersFittedon anExperimentalflowbench. | 14 | Dr. Ahmed Nabil El-Shimy |
| Velocity measurements: Pitot tube, laser Doppler velocimetry, hotwire anemometer. Experiment (6):Pitot tube velocity survey on air flow pipe cross- section. | 9 | Dr. Ahmed Nabil El-Shimy |
| Temperature Measurements: Thermal expansion thermometers, bimetallic expansion, resistance thermometers, semi conductor thermometers, thermo couples, thermal radiation thermometers. Experiments(7,8): Performancecomparisonofvarious temperature measuring | 17 | Dr. Ahmed Nabil El-Shimy |

**1 – Course teaching**

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

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

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

N/A………………………. ……………………..

**2- Teaching and learning methods:**

Lectures: x

Practical training/ laboratory: x

Seminar/Workshop:

Class Activity:

## Case Study:

Other assignments/homework:

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

**3- Student assessment:**

Method of assessment Percentage of total

Written Final examination 40 Marks

Written Midterm examination 25 Marks

Student Activity/laboratory work 20 Marks

Practical Activity 15 Marks

Assignments

Quizzes,

Attendance&Class Work

Total 100 Marks

**Members of examination committee**

Dr. Ahmed El-Sheemy

**Role of external evaluator**

N/A………………………………………

**4- Facilities and teaching materials:**

Totally adequate x

**5- Administrative constraints**

List any difficulties encountered

None…………………………..

**6- Student evaluation of the course: Response of Course Team**

The evaluation should be satisfactory and good.

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

N/A……………………………. …………………………….

**8- 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**

N/A……………………………. …………………………….

**9- Action plan for academic year 2020– 2021 N/A**

**Actions required Completion date Person responsible**

**Course coordinator:**Prof. Dr. Mohamed A El-Samanoudy

**Signature:** Ahmed El-Sheemy**,**

**Date: April ,5, 2021**