**Course Outline**

**Course Code: … ME122L… Course Title: … Engineering Mechanics-I: Statics (Lab)**

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| --- | --- |
| Program | BE Mechanical Engineering |
| Credit Hours | 1 |
| Duration | One semester |
| Prerequisites | None |
| Resource Person | Saba noor |
| Counseling Timing | 10:30 to 12:30Monday to Wednesday |
| Contact | saba.noor@umt.edu.pk |

**Chairman signature………………. Dean’s signature…………………………….**

**Date………………………………….**

**Learning Objective**

This Lab course aims to know the practical application of concepts which they have learned in their theory course.

**Learning Methodology**

* Lab lectures.
* Hands-on demonstrations.
* Practical performances.
* Lab end quizzes and comments.

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Quizzes +lab reports 40%

Assignments NA

Mid Term NA

Attendance & Class Participation

Term Project NA

Presentations NA

Final exam 60%

Total 100

**Recommended Text Books**

Engineering mechanics statics and dynamics by RC hibbler (11th edition)

**Reference Books**

* Engineering Mechanics by J .L. Meriam
* Vector Mechanics for Engineers by Beer and Johnston

**Calendar of Course contents to be covered during semester**

|  |  |
| --- | --- |
|  **week** |  **Activity** |
| 1 | Introduction to Engineering Mechanics Lab and to draw the layout of lab. |
| 2 | To study the system of units and some important conversion factors |
| 3 | To measure the surface area and volume of various objects and area of engineering mechanics laboratory in SI,FPS and CGS system. |
| 4 | To verify the law of forces in the members of a tie and jib of jib crane. |
| 5 | QUIZ+To determine tension in various points of a hanging rope loaded at different points. |
| 6 | To Verify Principal of Moments using principle of moment apparatus. |
| 7 | LAB report submission and completion activity |
| 8 | MID term viva |
| 9 | To determines the horizontal reaction due to loading a toggle joint mechanism. |
| 10 | To determine the forces in the members of the simple roof truss. |
|  **week** |  **Activity** |
| 11 | QUIZ + To find the center of gravity of various regular and irregular shapes |
| 12 | Verification of laws of friction considering various contacting surfaces and find out coefficient of friction  |
| 13 | Determination of reactions of simply supported beam by experimental observations and comparing with analytical results |
| 14 | QUIZ+To measure the forces in a truss before & after redundant member is present |
| 15 | LAB report submission and completion activity |
| 16 | FINAL VIVA |