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| **College**  | Engineering and Technology |
| **Department** | Mechanical Engineering |
| **Program** | B.Sc ( mechanical, Mechatronics , civil, building, automation and others) engineering programs |
| **Course Title** | STATICS | **Course Number:** | 12210243 |
| **Year** | 2023-2024 | **Semester:** | Summer |
| **Prerequisite(s)** | Cal 2, phys 2 |
| **Instructor** | Mhanna Obaid |
| **Instructor's e-mail** | m.obaid@ptuk.edu.ps |
| **Office Hours** | Mon., Thur. and Wed. 11:00-12:30  |
| **Class Time** | Sun. , Mon., wed.10:00-12:00 | **Class Room:** | H116  |
| **Course description** | Fundamental concepts of mechanics, force vectors, equilibrium of particles and rigid bodies. Analysis of simple structures, internal forces, friction, geometric properties of rigid bodies. |
| **Course Intended Learning Outcomes (CILOs)** | 1- **Knowledge and understanding** Identify and understand the fundamentals the force systems and equilibrium, Analysis of structures, centroid and moment of Inertia2-  **Intellectual/Cognitive skills**Ability to identify system of forces and equilibriumAbility to analyze structure and find forces.Ability to find centroids and moment of inertia. ability to apply knowledge of math engineering and science3-  **Subject specialization and practical skills**Identify and implement different mathematical rules to analyze and solve engineering problems in Statics.4- **General and transferable skills**ability to apply knowledge of math engineering and scienceability to identify, formulate and solve engineering problems |
| **Textbook(s)** | 1. **Engineering Mechanics - Statics by R.C. Hibbeler 13th ed.**
 |
| **Other required material (References):** | 1. Vector Mechanics Engineers: Statics (13th Edition) by Beer
2. Engineering Mechanics: Statics and Dynamics by Michael Plesha, Gary Gray and Francesco Costanzo (Jan 23, 2012).
3. Engineering Mechanics: Statics & Dynamics (5th Edition) by Anthony M. Bedford and Wallace Fowler (Jul 28, 2007).
 |
| **Other Resources used (e.g. e-learning, field visits, periodicals, software, etc. )** |  |

**Academic Quality Assurance Department**

**Course Syllabus Form**

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| **Course Teaching Methods** |
| **Teaching Method** | **CILOs** |
| Lectures  | A,d,e,g |
| quizes |  |
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| **Assessment Type** | **Details/Explanation of assessment in relation to CILOs** | **Weight** | **Date(s)** |
| **First Exam**  |  |   |  |
| **Mid Exam**  |  | 35  |  |
| **Quizzes** |  |   |  |
| **Laboratory/Practical**  |  |  |  |
| **Assignments** |  | 20 |  |
| **Project** |  |  |  |
| **Final Exam** |  | 45 |  |
| **Total** |  | 100% |  |

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| **Course Intended Learning Outcomes (CILOs)** |
| **CILOs**  | **Mapping to Program ILOs** |
| **On successful completion of the course, students will be able to:** | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **I** | **j** |
|  | x |  |   | x | x |  | x |  |  |  |
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| **Course Weekly Breakdown** |
| **Week** | **Date** | **Topics Covered** | **CILOs** | **Lab Activities** | **Assessment** |
| 1-3 |  | **Chapter Two: Force System*** 2D Force System.

3 D force System | A,g |  |   |
| 4-7 |  | **Chapter Three: Equilibrium*** Equilibrium in 2D force System.

Equilibrium in 3D force System | A,d,g |  |   |
| 8-11 |  | **Chapter Four: Structures*** Analysis of Trusses: Joint Method.
* Analysis of Trusses: Section Method.

Frames and Machines | A,d,e,g |  |  |
| 11-14 |  | **Chapter Five: Distributed Forces:*** Centroid.
* Moment of Inertia.
* Beams: External Effect.
* Beams: Internal Effect
* Moment of Inertia
 | A,d,e,g |  |   |
|  |  |  |  |  |  |

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| **Prepared by:** | **Mhanna Obaid** | **Signature**  |  |
| **Head of epartment**  |  | **Signature** |  |
| **Date**  |  |

**Relationship to program outcomes:**

**ABET**

**(a-k)**

**Program Outcomes**

a ability to apply knowledge of math engineering and science

b ability to design and conduct experiments and ability to analyze and interpret data

c ability to design system components or process to meet a need

d ability to function in multidisciplinary teams

e x ability to identify, formulate and solve engineering problems

f understanding professional and ethical responsibility

g ability to communicate effectively

h x broad education to understand the impact of engineering solutions in a global and

societal context

I recognition of need and ability to engage in life long learning

j knowledge of contemporary issues

k ability to use techniques, skills and tools in engineering practice