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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 Inertia  2-  **Intellectual/Cognitive skills**  Ability to identify system of forces and equilibrium  Ability to analyze structure and find forces.  Ability to find centroids and moment of inertia.  ability to apply knowledge of math engineering and science  3-  **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 science  ability 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