**The Hong Kong University of Science and Technology**

**UG Course Syllabus**

[Course Title] **Statics**

[Course Code] **CIVL 2110**

[No. of Credits] 3

[Any pre-/co-requisites] Prerequisite(s): PHYS 1112 OR PHYS 1312 Corequisite(s): MATH 1014 OR MATH 1020 OR MATH 1024

**Name:** [Instructor(s) Name] Lambros Katafygiotis; Tianju Xue

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**Course Description**

[Briefly describe the course content, key topics or themes, objectives, methods of instruction, e.g., lectures, discussions, projects].

Topics to be covered: Application of Newton's laws to engineering problems; statics of particles; rigid bodies; equivalent systems of forces; equilibrium of rigid bodies; distributed forces; centroids; moments of inertia; analysis of truss & frame structures; axial, shear and bending moment diagrams; friction.

Objectives: By successfully completing this course, a student would be able to (1) Reduce a loaded structure to a model, i.e. creating proper free-body diagrams (FBD) of the structure or the parts in it. (2) Examine the stability of this structure, and classify a stable structure as the statically determinate or indeterminate. (3) Perform static analysis to a statically indeterminate structure, e.g., truss or certain frames. (4) Calculate and sketch the internal force in a structural member, e.g., axial force, shear force, bending moment. (5) Identify the structural analysis that is NOT covered in this course, and what future courses (e.g., mechanics of materials, structural analysis), will cover the relevant topics.

**Assessments:**

[List specific assessed tasks, exams, quizzes, their weightage]

| Assessment Task | Contribution to Overall Course grade (%) |
| --- | --- |
| Assignments+ Quizzes | 20% |
| Midterm Exam | 30% |
| Final Exam | 50% |

**Required Texts and Materials**

Beer, Johnston, Mazurek & Eisenberg "Vector Mechanics for Engineers: Statics, 10th edition in SI Units", McGraw-Hill, 2013.

**[Optional] Additional Resources**

[List any additional resources, such as online platforms, library resources, etc.]

Coursera course: "Mastering Statics" Instructed by Prof. Lambros Katafygiotis