



**PHYSICS**  
**Mechanical Engineering Technology**  
**Engineering Physics I**  
203-943-DW (all sections)  
Winter 2020

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**Pre-requisites** High School Physics 553-504

**Co-requisites** Engineering Mathematics I (201-941-DW)

**Ponderation** 2-1-2 (2 hours of lecture, 1 hour of labs, and 2 hours of work outside class per week)

**Course objectives** This course is intended to introduce the student to the engineering approach for the solution of equilibrium problems.

**Course competencies** This course will allow the student to partially achieve the competency:  
012J: Analyze the internal and external forces exerted on a mechanical object

1. Analyze the external forces exerted on a structure or a mechanical object.
2. Analyze the strength of materials.
3. Analyze kinematic motion in assemblies and systems.
4. Analyze forces exerted in a mechanism.
5. Analyze the energy generated in a mechanism.

**Evaluation** The Institutional Student Evaluation Policy (ISEP) is designed to promote equitable and effective evaluation of student learning and is therefore a crucial policy to read and understand. The policy describes the rights and obligations of students, faculty, departments, programs, and the College administration with regard to evaluation in all your courses, including grade reviews and resolution of academic grievance. ISEP is available on the Dawson website.

Assignments, quizzes and class tests <sup>y</sup>	50%
Lab activities & experiments	20%
Final exam	30%

<sup>y</sup>Your teacher will provide a detailed breakdown of these components and a tentative test schedule during the first week of class.

In order to pass the course, students must show a basic understanding of the course material at the IJTJ0 g

**Literacy standards** It is expected that students will be able to comprehend the course material and express themselves appropriately as a normal part of their academic performance in the course. Marks may be deducted for inadequate communication skills.

**Laboratory work** Experimentation is an essential part of science. Students will be expected to perform experiments and report on their results. Your teacher will provide you with instructions for lab experiments and activities (there is no manual to purchase). **Students must be present during the entire lab activity to receive credit.**

**Student conduct** Everyone has the right to a safe and non-violent environment. Students are obliged to conduct themselves as stated in the Student Code of Conduct and in the ISEP section on the roles and responsibilities of students (ISEP section II-D). Disruptions or excessive noise will not be tolerated. Students who do not comply with these rules will be asked to leave the class and may be referred to Student's Services for disciplinary action. **Mutual respect is the key to a harmonious learning environment.**

**Academic integrity** Cheating, copying, or any other form of academic dishonesty will not be tolerated. Students should acquaint themselves with the policy of the College on plagiarism and cheating. According to ISEP, the teacher is required to report to the Sector Dean all cases of cheating and plagiarism affecting a student's grade (ISEP section V-C). The usual penalty for the first instance of cheating will be a grade of zero for the piece of work in question to all parties involved (under certain circumstances, even a first offence may be penalized by failure in the course). A second offence may result in the failure of the course. Students should note that using someone else's laboratory data without authorization from the student and the teacher is cheating.

**Intensive course concepts** If a student is attending an intensive course, the student must inform the teacher, within the first two weeks of class, of the specific dates of any anticipated absences.

**Policy on religious observance** Students observing religious holidays must inform their teachers, in writing, as prescribed in the ISEP Policy on Religious Observances, no later than the end of the second week of the impacted semester or term. This applies both to the semester or term, as well as to any final examination period. (ISEP Section IV-D) Please refer to the academic calendar for the exact dates. Forms for this purpose are available from your teacher. Your teacher will inform you of any modifications to planned course activities resulting from the teacher's own religious commitments.

**Course content** The material to be covered is contained in the following chapters and sections of the text.

Weeks	Topics	Chapter & Section
1	Introduction: Units and unit conversions	Ch.1: 1{4
1	Introduction: A review of mathematical concepts	Ch.1: 5{11
2	Vectors and forces	Ch.2: all
3	Moments and couples	Ch.3: all
4{5	Equilibrium and force systems	Ch.4: all
6{8	Structures and members	Ch.5: all
9{10	Friction	Ch.7: all
11{12	Centroids and centre of gravity	Ch.8: all
13{15	Moment of inertia	Ch.9: all