



PHYSICS
Science
Engineering Physics
203-BZE-05 (all sections)
Winter 2019

Teacher

Jean-Francois Briere

Attendance & participation

Although class attendance is not compulsory, students should make every effort to attend all classes. In the event that a class is missed, the student is responsible for all material covered or assigned during that class. **Attendance during laboratory experiments and for class tests is however compulsory.**

Course content

The material to be covered is contained in the following chapters and sections of the texts.

| Weeks | Topics | Pages |
|-------|---|--|
| 1 | Intro to structural mechanics | From <i>Coursepack</i> p. 4{32 |
| 2 | Trusses, frames and machines | p. 33{56 |
| 3 | Static equilibrium in 3D | p. 57{72 |
| 4 | Internal loads and stresses | p. 73{92 |
| 5 | Axial strain | p. 96{107 |
| 6 | Shear force and bending moment diagrams | p. 115{131 |
| 7 | Bending and shearing stresses in beams | p. 132{159 |
| 8 | Properties of a system of particles; centre of mass | From <i>University Physics, OpenStax</i> Ch. 9, sections 1{6 |
| 9-12 | Rotational dynamics of a rigid body | Ch 10 all sections, Ch 11 sections 1{3 |
| 13 | Intro to fluid mechanics: density, pressure, forces | Ch. 14 sections 1, 2 |
| 14 | Buoyancy | Ch. 14 section 4 |
| 15 | Fluid dynamics | Ch. 14 sections 5, 6 |

Comprehensive examination Second-year students can opt to complete the independent study portion of their comprehensive examination in this course. (This option is not available in continuing education courses.) The project will be evaluated on pass or fail basis independently from the course grade.