GENT 2323 Statics  
**Prerequisites:** MATH 2123 or 2144 and PHYS 1114 or PHYS 2014.  
**Description:** Forces acting on bodies at rest; forces, moments of force, distributed forces, reactions, free-body diagrams, friction, internal forces and moments of inertia. Applications.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology

GENT 2650 Technical Projects  
**Prerequisites:** Completion of three semesters’ work in a technical institute curriculum.  
**Description:** Special projects assigned by advisers with the approval of the director. A comprehensive written report must be prepared and an oral examination may also be required. Offered for variable credit, 1-4 credit hours, maximum of 4 credit hours.  
**Credit hours:** 1-4  
**Contact hours:** Other: 1  
**Levels:** Undergraduate  
**Schedule types:** Independent Study  
**Department/School:** Engineering Technology

GENT 3323 Strength of Materials  
**Prerequisites:** MATH 2123 or MATH 2144 with grade of "C" or better in GENT 2323 or ENSC 2113.  
**Description:** Stress and strain and their relation to loads. Axial, torsional and bending loads, beam deflection, columns and combined stresses. Applications emphasized. Course previously offered as MCDT 3323 and MET 3323.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology

GENT 3503 Fundamentals of Mechatronics  
**Prerequisites:** Grade C or better in EET 3104 or EET 2635.  
**Description:** Fundamentals of mechatronic systems and components. Different modeling approaches used for mechatronics systems, sensors and actuators, data acquisition and interfacing, signal conditioning, and PLCs.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

GENT 4503 Mechatronics System Design  
**Prerequisites:** Grade C or better in GENT 3123 and GENT 3503 (can be concurrent enrollment in GENT 3123).  
**Description:** Modelling of mechanical, electrical, and hydraulic components. Feedback control systems, electro-hydraulic drives, electric drives, and microcontroller programming.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

GENT 5113 Intelligent Mechatronics Systems and Robotics  
**Prerequisites:** GENT 3123 or equivalent.  
**Description:** Modelling of mechanical, electrical, and hydraulic components and robotic manipulators. Control systems design, electro-hydraulic drives, electrical drives, robotic manipulator and intelligent control design.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3  
**Levels:** Graduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology