

## Class of 2024 - Term 7 - Spring 2023 Semester

Course	Complementary Studies	Instructor
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## Civil

CIV 7130	Hydrology and Water Resources	Daraio, J.
CIV 7530	Design of Steel Structures	Adluri, S.
CIV 7730	Highway Engineering	Reza, A
<b><u>Choose two electives from the following options:</u></b>		
CIV 7140	Hydrotechnical Engineering	Abdel-Razek, A
CIV 7240	Geotechnical Engineering III	Dhar, A.
CIV 7620	Environmental Geotechniques	Zhang, H.
CIV 7340	Finite Element Structural Analysis	Adluri, S.

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**Computer**

ECE 7010	Computer Engineering Design Project I	Peters, D.
ECE 7400	Concurrent Programming	Shahidi, R.
ECE 7600	Introduction to Digital Signal Processing	Power, S.

**Choose two electives from the following options:**

ECE 7200	Control Systems II	Jamil, M.
ME 7204	Robotics and Automation	Mann, G.
ECE 7210	Process Control and Instrumentation	Iqbal, T.
ECE 7410	Image Processing and Applications	Czarnuch, S.
ECE 7420	Computer Security	Anderson, J.
ECE 7500	Introduction to LSI Design/ASIC Design	Zhang, L.
ECE 7620	Digital Communications	Karami, E.

Computer Science electives as approved by ECE Department Head

Students in the Biomedical stream, who have taken HKR 2311, should take

MED 6250 and one of ECE 7200, 7410, 7420, ME 7204

Prior to term 8, students are advised to consider completing as much as possible of:

[- complementary studies requirements](#)

[- free elective requirements](#)

(during either term 7 or the fall work term).

**Electrical**

ECE 7000	Electrical Engineering Design Project I	Peters, D.
ECE 7600	Introduction to Digital Signal Processing	Power, S.

**Choose three electives from the following options:**

ECE 7200	Control Systems II	Jamil, M.
ME 7204	Robotics and Automation	Mann, G.
ECE 7210	Process Control and Instrumentation	Iqbal, T.
ECE 7410	Image Processing and Applications	Czarnuch, S.
ECE 7620	Digital Communications	Karami, E.
ECE 7810	Renewable Energy Systems	Iqbal, T.

Students in the Biomedical stream, who have taken HKR 2311, should take

MED 6250, one of ECE 7200, 7410, ME 7204 and one other technical elective.

Prior to term 8, students are advised to consider completing as much as possible of:

[- complementary studies requirements](#)

[- free elective requirements](#)

(during either term 7 or the fall work term).

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**Mechanical**
**Mechanical Core - All students are required to take:**

ME 7203	Instrumentation and Experimental Design	De Silva, O.
ME 7704	Mechanical Project I	Galagedarage Don, Mihiran

**Plus one Free Elective from below:**

**Business 3630 - New Venture Creation** (strongly suggested by Memorial's Centre for Entrepreneurship(MCE) for entrepreneurship based ME 8705 projects)

**Any 2000\* level or higher University course. Any 3000\*level or higher Engineering course. \*Requires the approval of the Dept. Head**

**Students are required to select a stream path below, since many Term 8 Technical Electives require Term 7 courses as pre-requisites:**

**Students who choose to opt out of the Biomed stream in Term 7, HKR 2311 will count towards the Free Elective**

**Mechanics and Materials**
**All stream students are required to take:**

ME 7104	Industrial Materials	Alidokht, S.
ME 7703	Mechanical Component Design II	Abedinilaksar, M.

**Plus one Technical Elective from below:**

ME 7105	Welding and Joining	Alidokht, S.
ME 7603	Finite Element Analysis	Elruby, A.

**Thermal Fluids**
**All stream students are required to take:**

ME 7404	Heat Transfer II	Baafour, N.
ME 7405	Mechanical Equipment	Muzychka, Y.

**Plus one Technical Elective from below:**

ME 7503	Gas Dynamics	Muzychka, Y.
ME 7603	Finite Element Analysis	Elruby, A.

**Mechatronics**
**All stream students are required to take:**

ME 7205	Mechatronics II	AL-Rawashdeh, Y.
ME 7703	Mechanical Components Design II	Abedinilaksar, M.

**Plus one Technical Elective from below:**

ME 7204	Robotics & Automation	Mann, G.
ME 7220	Guidance Navigation and Control	De Silva, O.
ECE 7200	Controls II	Jamil, M.
ECE 7410	Image Processing and Applications	Czarnuch, S.

**Petroleum Technical Stream**
**All stream students are required to take:**

PROC 7291	Advanced Petroleum Production Engineering	Aborig, A.
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**Plus one Technical Elective from below:**

PROC 7171	Safety and Risk Engineering	Ahmed, S.
ME 7405	Mechanical Equipment	Muzychka, Y.
ME 7503	Gas Dynamics	Muzychka, Y.

**Biomedical Stream Stream**
**All stream students are required to take:**

MED 6250	Clinical Research	
HKR 2311	Anatomy and Physiology (MUST have been taken in Winter 2018 by distance)	

**Plus one Technical Elective from below:**

ECE 7410	Image Processing and Applications	Czarnuch, S.
ME 7204	Robotics & Automation	Mann, G.
ME 7603	Finite Element Analysis	Elruby, A.

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**ONAE**


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ONAE 7000	Ocean Systems Design	Smith, D
ONAE 7002	Ship Structures II	Andrade, S.
ONAE 7033	Marine Hydrodynamics	Peng, H
ONAE 7036	Maneuvering of ocean Vehicles	Qiu, W
<b><u>Choose one elective from the following options:</u></b>		
ONAE 7003	Small Craft Design	Walker, D
ONAE 7046	Marine Economics and Ship Construction	Molyneux, D
PROC 7171	Safety and Risk Engineering (distance)	Ahmed, S.
<b>Or a technical Elective approved by the Department Head</b>		

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**Process**


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PROC 7021	Process Dynamics and Control	Ahmed, S
PROC 7040	Process Engineering Project I	Ahmed, S
PROC 7077	Process Plant Design and Economics	Azargohar, R

**In addition to the three required course listed above, all students must register for two Technical Stream Courses. The recommended courses are as follows:**

**Petroleum Technical Stream**

PROC 7125	Process Data Analytics	Imtiaz, S
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**Choose one electives from the following options:**

PROC 7171	Safety and Risk Engineering	Ahmed, S.
PROC 7291	Advanced Petroleum Production Engineering	Aborig, A

**Process Technical Stream**

PROC 7125	Process Data Analytics	Imtiaz, S
PROC 7141	Bioprocess Engineering I	Zendeboudi, S.
PROC 7171	Safety and Risk Engineering	Ahmed, S.
PROC 7293	Mineral Processing and Tailings Management	Lin, C

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