

Class of 2023 - Term 7 - Spring 2022 Semester

Course	Complementary Studies	Instructor
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Civil

CIV 7530	Design of Steel Structures	Adluri S
CIV 7130	Hydrology and Water Resources	Snelgrove, K
CIV 7730	Highway Engineering	S. Feroz
<u>Choose two electives from the following options:</u>		
CIV 7620	Environmental Geotechniques	Zhang, H
CIV 7340	Finite Element Analysis	Adluri S
CIV 7140	Hydrotechnical Engineering	Snelgrove, K

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Computer

ECE 7010	Computer Engineering Design Project I	Peters, D
ECE 7600	Introduction to Digital Signal Processing	Power, S
ECE 7400	Concurrent Programming	Shahidi, R
<u>Choose two electives from the following options:</u>		
ECE 7200	Control Systems II	O'Young, S
ECE 7410	Image Processing and Applications	Czarnuch, S
ECE 7420	Computer Security	Anderson, J
ME 7204	Robotics and Automation	Mann, G
ECE 7210	Process Control and Instrumentation	Iqbal T.
ECE 7500	Introduction to LSI Design/ASIC Design	Zhang, L
ECE 7620	Digital Communications	Ndjiongue, R

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
<u>Choose three electives from the following options:</u>		
ECE 7200	Control Systems II	O'Young, S
ECE 7800	Power System Analysis	Jeyasurya, B.
ECE 7410	Image Processing and Applications	Czarnuch, S
ECE 7810	Renewable Energy Systems	Iqbal T.
ME 7204	Robotics and Automation	Mann, G
ECE 7210	Process Control and Instrumentation	Iqbal T.
ECE 7620	Digital Communications	Ndjiongue, R

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 7704	Mechanical Project I	Elruby, A / Nakhla, S.
ME 7203	Instrumentation and Experimental Design	De Silva, O

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	Anwar, S
ME 7703	Mechanical Component Design II	Yang, J
Plus one Technical Elective from below:		
ME 7603	Finite Element Analysis	Elruby, A.
ME 7105	Welding and Joining	Alidokht, S

Thermal Fluids

All stream students are required to take:

ME 7404	Heat Transfer II	Nyantekyi-Kwakye, B.
ME 7405	Mechanical Equipment	Nyantekyi-Kwakye, B.
Plus one Technical Elective from below:		
ME 7603	Finite Element Analysis	Sharan, A
ME 7503	Gas Dynamics	Ibraheem, L

Mechatronics

All stream students are required to take:

ME 7703	Mechanical Components Design II	Yang, J
ME 7205	Mechatronics II	Al Janaideh, M
Plus one Technical Elective from below:		
ECE 7200	Controls II	O'Young, S
ECE 7410	Image Processing and Applications	Czarnuch, S
ME 7204	Robotics & Automation	Mann, G
ME 7220	Guidance Navigation and Control	De Silva, O

Petroleum Technical Stream

All stream students are required to take:

PROC 7291	Advanced Petroleum Production Engineering	Aborig, A
Plus one Technical Elective from below:		
ME 7405	Mechanical Equipment	Nyantekyi-Kwakye, B.
PROC 7171	Safety and Risk Engineering (distance)	Taleb-Berrouane, M
ME 7503	Gas Dynamics	Ibraheem, L

Biomedical Stream Stream

All stream students are required to take:

MED 6250	Clinical Research	Czarnuch, S
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	Sharan, A

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ONAE

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

Process

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

ROC 8294/825	Downstream Processing/Petroleum Refining Engineering	TBA
PROC 7123	Process Simulation	Sajid, Z.
<u>Choose one electives from the following options:</u>		
PROC 7171	Safety and Risk Engineering (Distance)	Taleb-Berrouane, M
PROC 7291	Advanced Petroleum Production Engineering	Aborig, A

Process Technical Stream

PROC 7123	Process Simulation	Sajid, Z.
PROC 7171	Safety and Risk Engineering (Distance)	Taleb-Berrouane, M