

# Option in Management Sciences

This designated Option consists of a mixture of courses, some of which are technical in nature, and some of which qualify as complementary studies courses. The Option is available to all Engineering students. It is intended for students interested in the issues, concepts and techniques related to managerial problems, particularly in technologically-based organizations. The Option in Management Sciences consists of six courses: three required and three elective courses.

The three required courses cover the fundamental disciplines of *Engineering Economics* (CIVE 292, ENVE 292, MSCI 261), *Organizational Behaviour* (MSCI 211) or *Organizational Design* (MSCI 311), and *Operations Research* (MSCI 331 or CIVE 332 or ENVE 320).

The three elective courses span the range of *Organizational Behaviour* (MSCI 211 or 311), *Operations Research* (MSCI 431), *Production Management* (MSCI 432), *Information Systems* (MSCI 442, 443, 444), *Economic Decision Making* (MSCI 452), *Management of Technology* (MSCI 421, 422, GENE 452). A minimum of 2 elective courses must come from the Management Sciences or other engineering departments. A maximum of 1 elective course can be taken outside the engineering departments, subject to the approval by the MSCI Option Coordinator and the Associate Chair for Undergraduate Studies.

Students should declare the MSCI Option in 1B through a “Plan Modification Form”, which can be downloaded from the Registrar’s Office website. They must also identify the MSCI Option on the “Intent to Graduate” form in 4B.

Six Courses Needed	Course	Classification	Term Offered	Equivalent Courses
Three Required Courses	MSCI 261 <i>Managerial and Engineering Economics</i>	Core (CSE-B)	W, S	CHE 044 CIVE 292 ENVE 292 SYDE 331
	MSCI 211 <i>Organizational Behaviour</i> or MSCI 311 <i>Organizational Design and Technology</i>	Complementary (CSE-C) Complementary (CSE-C)	F, S F, W	PSYCH 338 None
	MSCI 331 <i>Operations Research 1</i>	Core	F, W, S	SYDE 311, CO 350 CIVE 332 ENVE 320
Three Elective Courses	MSCI 211 <i>Organizational Behaviour</i>	Complementary (CSE-C)	F, S	PSYCH 338
	MSCI 311 <i>Organizational Design and Technology</i>	Complementary (CSE-C)	F, W	None
	MSCI 421 <i>Strategic Management of Technology and Innovation</i>	Complementary (CSE-D)	S	None
	MSCI 422 <i>Economic Impact of technology and Innovation</i>	Complementary (CSE-A)	F	None
	MSCI 431 <i>Operations Research 2</i>	Technical	W	SYDE 511, CS 457
	MSCI 432 <i>Introduction to Production Management</i>	Technical	F, W, S	None
	MSCI 442 <i>Impact of Information Systems on Organizations and Society</i>	Complementary (CSE-A)	W	None
	MSCI 443 <i>Telecommunications</i>	Complementary (CSE-D)	W	None
	MSCI 444 <i>Information Systems Analysis and Design</i>	Technical	W	CS 430, CS 432
	MSCI 452 <i>Decision Making Under Uncertainty</i>	Technical	S	None
GENE 452 <i>Technical Entrepreneurship</i>	Complementary (CSE-D)	W	None	

## Possible Course Sequences by Program

Six Courses Needed	Course	Classification	Term Offered	CIV E	ENV E
Three Required Courses	MSCI 261	Core (CSE-B)		<b>2A (CIVE 292)</b>	<b>2B (ENVE 292)</b>
	MSCI 211 or MSCI 311	Complementary (CSE-C)	F, S	<b>2B<sup>1</sup></b> , 3B	<b>1B</b>
	MSCI 311	Complementary (CSE-C)	F, W	<b>1B<sup>1</sup></b> , 3A, 3B	<b>2A</b> , 3B
	MSCI 331	Core		<b>3B (CIVE 332)</b>	<b>3A (ENVE 320)</b>
Three Elective Courses	MSCI 211	Complementary (CSE-C)	F, S	<b>2B<sup>1</sup></b> , 3B	<b>1B</b>
	MSCI 311	Complementary (CSE-C)	F, W	<b>1B<sup>1</sup></b> , 3A, 3B	<b>2B</b> , 3B
	MSCI 421	Complementary (CSE-D)	S	2B	3A
	MSCI 422	Complementary (CSE-A)	F	<b>3B<sup>2</sup></b>	4A (extra)
	MSCI 431	Technical	W	4B	3B, 4B
	MSCI 432	Technical	F, W, S	3B, 4A, 4B	3A, 3B, 4A, 4B
	MSCI 442	Complementary (CSE-A)	W	<b>3A<sup>2</sup></b>	3B
	MSCI 443	Complementary (CSE-D)	W	3A	3B
	MSCI 444	Technical	W	4B	3B, 4B
	MSCI 452	Technical	S	4A	3A
	GENE 452	Complementary (CSE-D)	W	3A	3B, 4B (extra)

## Notes

1. MSCI 211 is not a prerequisite for MSCI 311. For CIV E students, make sure to take MSCI 311 in 1B and MSCI 211 in 2B.
2. At least one CSE-A course is required to graduate. For CIV E students, make sure to take MSCI 442 in 3A or MSCI 422 in 3B.
3. CIV E 596 has been approved as an acceptable technical elective for the MSCI Option on an individual basis. Please obtain approval from the MSCI Option Coordinator and the Associate Chair for Undergraduate Studies, Department of Civil Engineering.
4. Pay special attention to courses and terms in bold face.