

## 1st Year

## 2009/2010 Curriculum

Students in First Year in 2009/2010 Academic Year				
			Pre- and/or Co-Requisites	
FALL	1	AMAT 217	Calculus for Engineering and Scientists	
	2	ENGG 205	Engineering Mechanics I	
	3	ENGG 251	Design & Communications I	
	4	MATH 211	Linear Methods	
F or W	5	CHEM 209	General Chemistry for Engineers	
	6	ENGG 201	Behaviour of Liquids, Gases and Solids	
	7		Complementary Study (1 half-course equivalent)	
WINTER	8	AMAT 219	Multivariable Calculus for Engineers	AMAT 217
	9	ENGG 233	Computing for Engineers I	
	10	ENGG 253	Design & Communications II	ENGG 251
	11	PHYS 259	Electricity and Magnetism	ENGG 205; co-req: AMAT 219

## 2010/2011 Curriculum

Students in First Year in 2010/2011 Academic Year				
			Pre- and/or Co-Requisites	
FALL	1	AMAT 217	Calculus for Engineering and Scientists	
	2	ENGG 200	Engineering Design and Communication	Not open to students with credit in ENGG 251 and 253
	3	MATH 211	Linear Methods I	
F or W	4	CHEM 209	General Chemistry for Engineers	
	5	ENGG 201	Behaviour of Liquids, Gases and Solids	
	6	ENGG 202	Engineering Statics	Not open to students with credit in ENGG 205
	7	ENGG 233	Computing for Engineers I	
	8		Complementary Study (1 half-course equivalent) (See Note 1)	
WINTER	9	AMAT 219	Multivariable Calculus for Engineers	AMAT 217
	10	ENGG 225	Fundamentals of Electrical Circuits and Machines	Not open to students with credit in ENGG 325, BMEN 327, or ENEL 341
	11	PHYS 259	Electricity and Magnetism	AMAT 217; MATH 211; co-req: AMAT 219

**Note 1:** Taking a complementary studies course in first year is optional, not required. All complementary studies courses must be taken prior to graduation.

## 2nd Year

## Oil and Gas Engineering: Regular Program

<b>BLK WK - WINTER</b>	ENCH 101	Computing Methods	ENGG 233
<b>FALL</b>	1 AMAT 307	Differential Equations for Engineers	AMAT 219; MATH 211 or 221
	2 ENGG 319	Probability and Statistics for Engineers	AMAT 219
	3 ENGG 325	Electric Circuits and Systems	PHYS 259
	4 ENGG 349	Engineering Mechanics II	ENGG 202 or 205; AMAT 219
	5 GLGY 377	Petroleum Engineering Geology	
<b>F or W</b>	6	Complementary Study (1 half-course equivalent)	
<b>WINTER</b>	7 CHEM 357	Industrial Organic Chemistry for Engineers	CHEM 209
	8 ENPE 313	Introduction to Flow in Porous Media	Co-req: ENCH 331 or ENME 341 or equivalent
	9 ENCH 315	Chemical Engineering Process Calculation	Co-req: ENGG 311 or ENEE 311
	10 ENCH 331	Process Fluid Dynamics	ENGG 201 and 205; AMAT 219 and 307
	11 ENGG 311	Engineering Thermodynamics	ENGG 201; AMAT 217
	12 ENGG 317	Mechanics of Solids	ENGG 202 or 205; AMAT 217

**Note 1:** ENGG 325 will not be offered in 2011/2012. Students who have not successfully completed ENGG 325 by the end of the Fall 2010 session will be required to complete ENGG 225.

## 3rd Year

## Oil and Gas Engineering: Regular Program

<b>FALL</b>	1 ENCH 403	Heat and Mass Transfer	AMAT 307; ENCH 331
	2 ENCH 427	Chemical Engineering Thermodynamics	ENGG 311 or ENEE 311; ENCH 315
	3 ENGG 407	Numerical Methods in Engineering	ENGG 233; AMAT 307
	4 ENPE 429	Reservoir Engineering	ENGG 311; one of ENPE 313, 513 or GLGY 613; GLGY 377
	5 ENPE 515	Drilling and Well Completions	ENGG 311 or ENEE 311
<b>F or W</b>	6-7	Complementary Studies (2 half-course equivalents)	
<b>WINTER</b>	8 ENCH 401	Analyses in Chemical, Oil & Gas Engineering	ENCH 331 and 403; AMAT 307
	9 ENCH 405	Separation Processes I	ENCH 403 and 427
	10 ENPE 423	Oil & Gas Engineering Process Development	ENCH 315
	11 ENPE 507	Well Logging and Formation Evaluation	ENPE 429 or 523 or consent of the Dept.
	12 ENPE 533	Petroleum Production Engineering	ENPE 429 or 523 or consent of the Dept.

## 4th Year

Oil and Gas Engineering: Regular Program				
FALL	1	ENCH 501	Transport Phenomena	ENPE 429 or ENCH 401 or consent of Department
	2	ENPE 505	Oil & Gas Separation Processes	ENCH 405 or consent of Department
	3	ENPE 511	Design for Oil & Gas Engineering I	ENCH 315 and 405; ENPE or ENCH 423; ENPE 429 or 523
	4	ENPE 509	Well Testing	ENPE 429 or 523, or consent of Department
	5	ENPE 525	Waterflooding and Enhanced Oil Recovery	ENPE 429 or 523, or consent of Department
F or W	6	ENGG 513	Role and Resp. of the Prof. I Engineer in Soc.	4th year standing
	7-8		Technical Electives (2 half-course equivalents)	
	9		Complementary Studies (1 half-course equivalent)	
WINTER	10	ENPE 551	Petroleum Engineering Laboratory	ENCH 405; ENPE 313 or 513; ENPE 429 or 523
	11	ENPE 531	Design for Oil & Gas Engineering II	ENPE 511

## TECHNICAL ELECTIVES

Oil and Gas Engineering Approved Technical Electives			
Select 2 half-course equivalents			
<b>FALL</b>			
	ENEE 501	Pollution Prevention & Control for Energy Industry	
	ENEE 505	Effluent Treatment Processes for Energy Industry	
	ENPE 543	Geol. Char. of Oil and Gas Reservoirs	ENPE 429 or 523 or consent of the Dept.
	ENPE 561	Fuel Science and Technology	
	ENPE 563	Materials Aspects of Oil & Gas Production	
<b>WINTER</b>			
	CHEM 579	Surface and Colloid Chemistry for Engineers	CHEM 357; ENCH 427
	ENCH 503	Crude Oil Upgrading & Refining	CHEM 409; ENCH 421; or consent of the Dept
	ENEE 503	Life Cycle Assessment	
	ENPE 573	Unconventional Gas Exploitation	ENPE 429 or 523 or consent of the Dept.
	ENPE 519	Special Topics	Consent of the Department Head
<b>NOT OFFERED 2010/2011</b>			
	ENCH 537	Computational Thermodynamics	ENCH 427 or equivalent
	ENEE 555	Energy & Env. Systems Analysis (not offered 2010/11)	3rd, 4th or 5th yr. standing
	ENPE 555	Oil & Gas Field Safety and Environment	
	ENPE 571	Unconventional Oil Exploitation	ENPE 429 or 523 or consent of the Department