

## **KATE GLEASON COLLEGE OF ENGINEERING PATHWAYS TO STUDY ABROAD**

- Biomedical Engineering BS
- Chemical Engineering BS
- Computer Engineering BS
- Core Program in Electrical Engineering BS
- Industrial Engineering BS
- Mechanical Engineering BS
- Microelectronic Engineering BS

Biomedical Engineering B.S. Degree - STUDY ABROAD, SPRING 2nd YEAR - SEMESTERS

Year	FIRST YEAR		SECOND YEAR			THIRD YEAR			FOURTH YEAR			FIFTH YEAR	
Term	FALL SEM	SPRING SEM	FALL SEM	SPRING - STUDY ABROAD	SUMMER	FALL SEM	SPRING SEM	SUMMER	FALL SEM	SPR SEM	SUMMER	FALL SEM	SPRING SEM
Engineering Topics	BIME-181 Intro to BME 1	BIME-182 Intro to Program. for BME 2	BIME-200 Musculoskeletal Biomechanics 3				BIME-410 Systems Physiology I 3		BIME-411 Systems Physiology II 3			BIME-497 Multi-Disc Senior Design I 3	BIME-498 Multi-Disc Senior Design II 3
			BIME-250 Biosystems Process Analysis 3	BIME-320 Fluid Mechanics 3			BIME-440 Biomed Signals & Analysis 4		BIME-450 Analysis of Cmplx Biosys 3			BIME-460 Dynamics & Ctrl Biomed Sys 3	Prof Tech Elective 3
			EGEN-099 Co-op Prep Sem 0		Co-op (Optional)		BIME-391 Biomechanics & Biomaterials Lab 2	Co-op	BIME-491 Systems Phys & Sig Analysis Lab 1	Co-op	Co-op	BIME-492 Sys Phys Ctrl & Dynamics Lab 1	
Mathematics/Science Topics	CHMG-141 Gen Chem I 3	CHMG-142 Gen Chem II 3	BIOG-140 Cell & Mol Bio Eng I 3	STAT-251 Prob & Stat for Eng I 3			BIOG-141 Cell & Mol Bio Eng II 3						BIOG-142 Biocomp and Immune Sys 3
	CHMG-145 Chem. Lab I 1	CHMG-146 Chem. Lab II 1	MATH-231 Diff Equations 3	MATH-221 Multi-Var & Vector Calc 4									
	MATH-181 Project-Based Calculus I 4	MATH-182 Project-Based Calculus II 4	PHYS-212 Univ Phys II 4										
Gen Ed/Other Topics	Year One 0	Liberal Arts & Sci Persp #1 3		Liberal Arts & Sci Persp #2 3					Liberal Arts & Sci Immersion #1 3			Liberal Arts & Sci Immersion #2 3	Liberal Arts & Sci Persp #4 3
	Liberal Arts & Sci First Year Writing 3	Wellness Course 0		Liberal Arts & Sci Persp #3 3								Free Elective 3	Liberal Arts & Sci Immersion #3 3
	Liberal Arts & Sci GE Elective 3											Wellness Course 0	Free Elective 3
Credits	15	17	16	16			15		16			16	18

Math/Science: 43 (Min ABET = 32)

Engineering Topics: 53 (Min. ABET = 48)

Gen Ed: 70 (Min. NYS = 60, not including electives)

4-credit courses: 8 (including Chem + labs as one 4-cr. Course)

3-credit course: 32 (not including Chem labs)

Guidelines: Max 4-credit courses: 8

Min 3-credit courses: 32

Suggested Student  
Abroad Term

# Chemical Engineering B.S. Degree—Study Abroad Student

		FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR		
Quarter:		FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	FALL	SPRING		
Engineering		CHME-181 Chem E Insights I (1 cr.)	CHME-182 Chem E Insights II (1 cr.)	CHME-230 Chemical Process Analysis	CHME-310 Applied Thermo- Dynamics	STUDY ABROAD		CHME-330 Mass Transfer Operations	CHME-350 Multiple Scale Material Science	CHME-490 Design With Constraint	CHME-492 Advanced Design Capstone	
					CHME-320 Continuum Mechanics I	Professional Technical Elective	CHME-321 Continuum Mechanics II	CHME-340 Reaction Engineering (4 Cr)	CHME-451 Analysis of Multi-Scale Processes			
					CHME-391 Chem E Principles Lab (2Cr.) <sup>ST</sup>	Professional Technical Elective	CHME-301 Analytical Tech. for Chem E I	CHME-302 Analytical Tech. For Chem E II	CHME-401 System Dynamics and Control			
								CHME-491 Chem E Processes Lab (2 Cr.) <sup>ST, WI</sup>	Professional Technical Elective			
Mathematics/Science		CHMG-141 General & Analytical Chemistry I	CHMG-142 General & Analytical Chemistry II	CHMO-231 Organic Chemistry I	CHMI-351 Inorganic Chemistry I			CHMA-231 Chem. Instrumental Analysis for Eng. (and Lab)				
		CHMG-145 Gen. Chem. Lab I (1 Cr.)	CHMG-146 Gen. Chem. Lab II (1 Cr.)	CHMO-235 Organic Chem. Lab I (1 Cr.)				PHYS-212 University Physics II (4 Cr)				
		MATH-181 Calculus I (4 Cr.)	MATH-182 Calculus II (4 Cr.)	MATH-231 Differential Equations	MATH-221 Multivariable and Vector Calc. (4 Cr.)							
		Free Elective										
Gen. Ed./Wellness/Co-op Prep/Year 1		Foundational Elective	PHYS-211 University Physics I (4 cr)	General Education: Perspectives #2	General Education: Perspectives #3	Free Elective	General Education: Perspectives #4		General Education: Immersion #2			
		Writing Seminar	General Education: Perspectives #1	General Education: Perspectives #3	General Education: Perspectives #3	Free Elective	General Education: Perspectives #4					
		Year 1 (0 Cr.)	Wellness (0 Cr.)	EGEN-099 Co-Op Prep Course (0 Cr.)	Wellness (0 Cr.)		General Education: Immersion #1		General Education: Immersion #3			
	Credit Hours	15	16	16	15	16	18	15	15	3		

Math / Science 41 (Min ABET = 32)  
 Engineering Topics 55 (Min. ABET = 48)  
 Gen Ed 68 (Min. NYS = 60)—not including electives

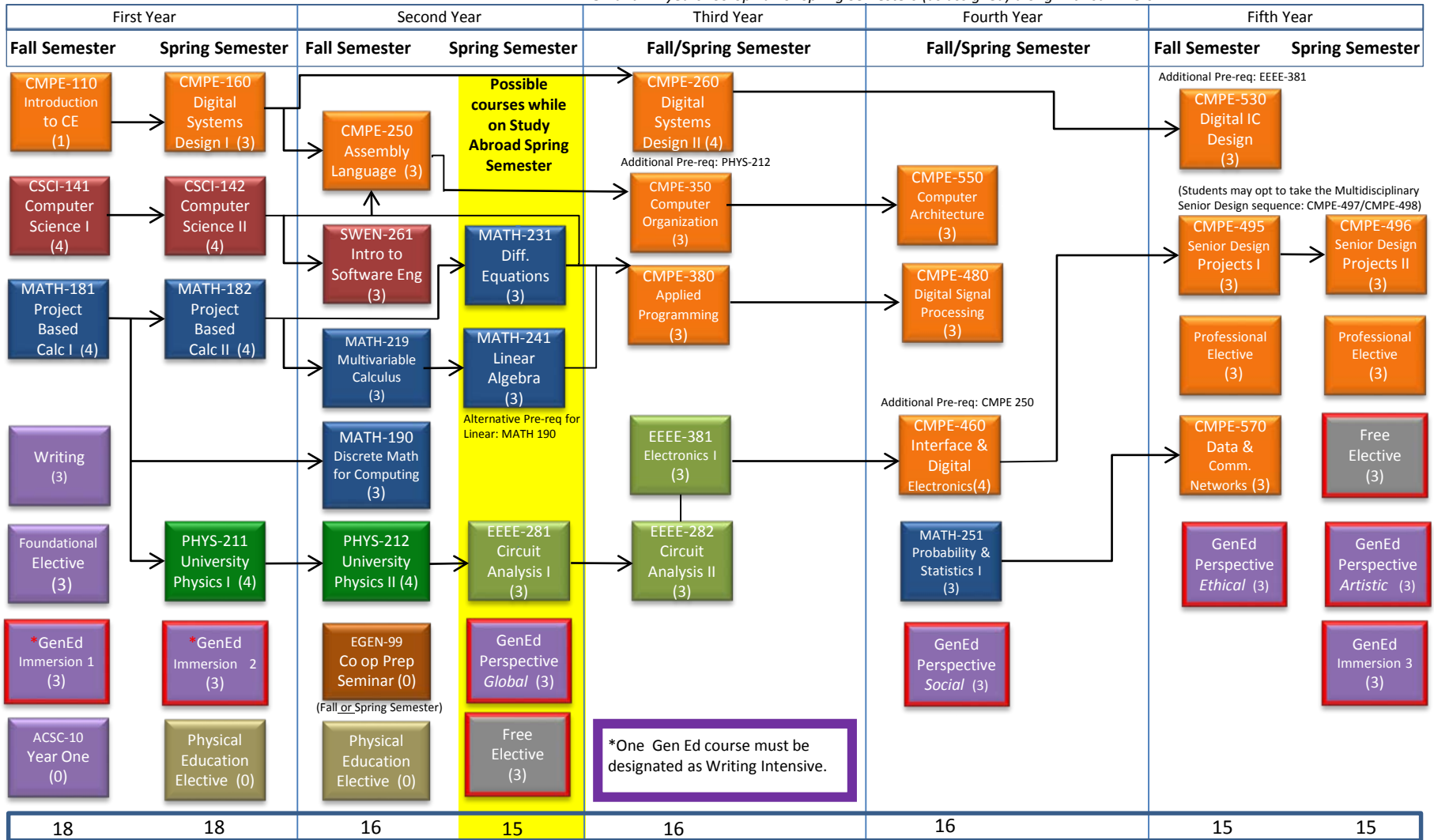
**All courses are 3 credits except where indicated**  
 3 credit courses: 29 (not including Chem Labs)  
 4 credit courses: 9 (including chem + Labs as one 4 Cr. course)

<sup>WI</sup>Writing Intensive Course      <sup>ST</sup>Statistics training provided

**Total =129 Credits**

# Computer Engineering BS Program Schedule

3<sup>rd</sup> and 4<sup>th</sup> years: Co-op Fall or Spring Semesters (as assigned) along with summers



\*One Writing Intensive course must be chosen from the class search using "WRTG" attribute and WI-GE attribute value. This can be used towards a Perspective, Immersion or Free Elective. During the third and fourth years of the CE BS Degree Program, two summers and two semesters are spent on co-op- alternating with coursework. IDE and two co op terms must be completed before taking Senior Design I.

## Study Abroad Planned for Spring of 2<sup>nd</sup> year

Plan is for reference only- all students will need to meet with academic advisor for customized planning.

\*Possibly take language as Immersion starting first semester.

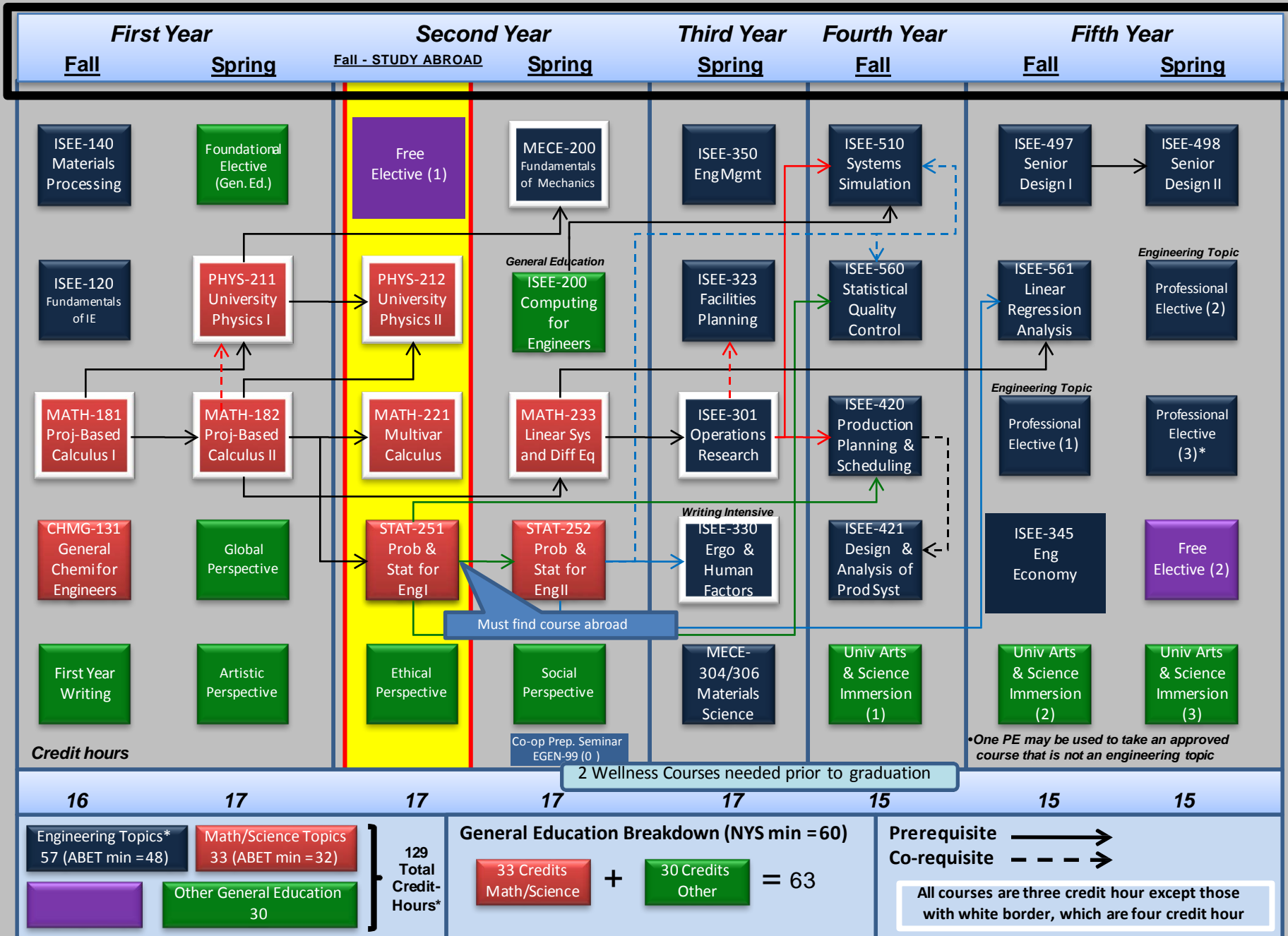
Any outlined courses can serve in the two General Education slots left on schedule.

# RIT BS Core Program in Electrical Engineering (Final Release SD 7/13/2015)

RIT BS Core Program in Electrical Engineering (Final Release SD 7/13/2015)							
Year One	Fall - Study Abroad	Spring	Year Three Spring	Year Four Spring	Year Five		
PB Calc I MATH-181 (4) All	PB Calc II MATH-182 (4) All	Mult & Vect Calc MATH-221 (4) All	Diff Eq MATH-231 (3) F,Sp	Cmplx Var MATH-381 (3) F,Sp	Prob & Stats I MATH-251 (3) F,Sp	Comm Sys EEEE-484* (3) F,Sp	Prof Elective EEEE-5XX (3)F, Sp
General Chem for Engr CHMG-131 (3) F,Sp	University Physics I PHYS-211 (4) F,Sp	University Physics II PHYS-212 (4) F,Sp	Semi Dev I EEEE-260 (3) F,Sp	EM Fields EEEE-374* (4) F,Sp	Embedded Sys Design EEEE-420* (3) F,Sp	Prof Elective EEEE-5xx (3)F, Sp	Free Elective (3)F, Sp
Writing Seminar ENGL-xxx (3) F, Sp	Perspective-2: Artistic xxxx-nnn (3) F, Sp	Ckts I EEEE-281* (3) F,Sp	Ckts II EEEE-282 (3) F,Sp	Linear Sys EEEE-353 (4) F,Sp	Classical Controls EEEE-414* (3) F,Sp	Sr. Design I EEEE-497 (3) F,Sp	Sr. Design II EEEE-498 (3) F,Sp
EE Pract EEEE-105* (1) F, Sp	Dig Sys I EEEE-120* (3) Sp	Dig Sys II EEEE-220* (3) Sp	Dig Sys II EEEE-220* (3) Sp	Electronic I EEEE-381* (3) F,SP	Electronic II EEEE-482* (4) F,SP	Mechatronics EEEE-483* (3) F,Sp	Prof Elective EEEE-5xx (3) F, Sp
YearOne ACSC-10 (0)F	Comp Prob Solv CMPR-271 (3) F,Sp	Perspective-3: Social xxxx-nnn (3) F, Sp	Co-op Prep Sem EGEN 99 (0) F, Sp	Immersion-1 xxxx-nnn (3)	Free Elective (3)F, Sp	Immersion-2 xxxx-nnn (3)F, Sp	Immersion-3 xxxx-nnn (3)F, Sp
Foundation Elective xxxx-nnn (3) F, Sp		Perspective-4: Ethical xxxx-nnn (3) F, Sp	Restricted Elective** (3)				
17	17	17	15	17	16	15	15
							Total Credits
							129

Legend	Professional Electives: Professional Electives from other departments can be taken with approval of faculty advisor
Math	Co-op: Summer & Fall 3rd and 4th year
Comp Science	
Physics	<b>Biomedical</b>
Chemistry	EEEE-530 Biomedical Instrumentation
Liberal Arts	EEEE-531 Biomedical Sensors and Transducers I*
Elect Engr	EEEE-532 Fundamental of Electrophysiology
Year One	EEEE-536 Biorobotics/Cybernetics
Restr Sci Elect	<b>Communications</b>
Free Elect	EEEE-678 Digital Signal Processing
Co-op	EEEE-592 Communication Networks
Course Name	EEEE-593 Digital Data Communications
Course #	<b>Control/RoboticsSystems</b>
Semesters	EEEE-547 Artificial Intelligence
* Indicates lab included	EEEE-585 Principles of Robotics*
Prerequisites	EEEE-536 Biorobotics & Cybernetics
Definitions	<b>Devices and Integrated Circuits</b>
A	EEEE-510 Analog Electronic
Course	EEEE-512 Advanced Semiconductor Devices
Prerequisites	EEEE-546 Power Electronics
A	EEEE-520 Design of Digital Systems*
Prerequisite	EEEE-521 Design of Computer Systems
→	EEEE-579 Analog Filter Design
	<b>Digital &amp; Computer Systems</b>
	EEEE-520 Design of Digital Systems*
	EEEE-521 Design of Computer Systems
	<b>Electromagnetic Fields &amp; Optics</b>
	EEEE-617 Microwave Circuit Theory
	EEEE-629 Antenna Theory & Design
	<b>MEMs</b>
	EEEE-689 Fundamentals of MEMS
	EEEE-793 MEMS Evaluation
	EEEE-798 Microfluidics
	<b>Signal Processing</b>
	EEEE-579 Analog Filter Design
	EEEE-678 Digital Signal Proc
	<b>** Restricted Elective:</b> 1. PHYS-213: Modern Physics 2. MATH-241: Linear Algebra 3. EEEE-346: Advanced C Prog 4. MCEE-201: IC Technology 5. MCEE-205: Statistics and Design of Experiments
	2 Wellness Courses
	<b>Co-op Requirements:</b> EEEE-499: 2 Summer Co-ops 2 Semester Co-ops

# BS Industrial Engineering Curriculum



Must find course abroad

Co-op Prep. Seminar EGEN-99 (0 )

\*One PE may be used to take an approved course that is not an engineering topic

Name \_\_\_\_\_

**Study Abroad Pathway**

**RIT MECHANICAL ENGINEERING - BS Degree  
FOR SCHEDULE PLANNING ONLY**

FALL SEMESTER	WINTER SESSION	SPRING SEMESTER	SUMMER SESSION
<b>Fall First Year</b> Calculus I Writing Perspective I Engineering Mechanics Lab Engineering Design Tools  <i>**Explore SA programs, meet with Advisor</i> <i>**Set up compass profile/explore programs</i>		<b>Spring First Year</b> Calculus Perspective II Perspective III Statics Material Science Material Science Lab  <i>**Meet with Advisor &amp; SA advisor</i> <i>**Finalize preferred program</i> <i>**Start selecting classes for spring</i>	2158 Su Vacation Term
<b>Fall Second Year</b> Multivariable/Diff Eq Thermodynamics Strengths of Materials <b>Strengths of Materials Lab</b> <b>Engineering Measurements Lab</b> Co-op Prep Seminar	<b>Study Abroad Notes for ME</b>  **light gray courses are flexible ** dark gray courses are mandatory **Labs must be taken at main campus **If Dynamics is taken prior to SA, consider taking UP II abroad. **Students can take 3 immersion classes while on study abroad	<b>Spring Second Year - Study Abroad</b> Foundation Elective Foundation Elective/Free Elective Math/Diff Eqs/Linear Algebra Immersion Course/Statistics Eng Course/Dynamics/Fluids/Circuits	<b>Summer</b> Vacation Term
<b>Fall Third Year</b> Boundary Value Problems Fluid Mechanics Numerical Methods System Dynamics Circuits I		<b>Spring Third Year</b> Semester Co-op	<b>Summer</b> Summer Co-op
<b>Fall Fourth Year</b> Linear Algebra Science Elective Engineering Applications Lab Heat Transfer I Contemporary Issues Extended Core Elective		<b>Spring Fourth Year</b>	<b>Summer</b> Summer Co-op
<b>Fall Fifth Year</b> Applied Statistics University Physics II University Arts & Sciences Immersion Applied Elective I Senior Design I		<b>Spring Fifth Year</b> University Arts & Sciences Immersion Applied Elective II Applied/Extended Core Elective Senior Design II Free Elective II	<b>Summer</b>
2201 Fa		2205 Sp	2208 Su

First Year			Second Year			Third Year			Fourth Year			Fifth Year	
Fall Semester	Spring Semester	Su.	Fall – Study Abroad	Spring Semester	Su.	Fall Semester	Spring Semester	Su.	Fall Semester	Spring Semester	Su.	Fall Semester	Spring Semester
MATH181 PB Calc I (4)	MATH182 PB Calc II (4)	Vacation	MATH-221 Multi Vec. Calc (4)	Perspective IV (3)	Vacation  or Coop	All 3 <sup>rd</sup> year students Coop in the fall!	MCEE-320 EM Fields (3)	Coop	MCEE-503 Thin Films (3)	All 4 <sup>th</sup> year students Coop in the Spring and Summer!	MCEE-495 Sr Des. I (3)	MCEE-496 Sr Des. II (3)	
CHMG-131 Chem (3)	PHYS-211 Univ Phys I (4)		PHYS-212 Univ Phys II (4)	PHYS-213 Mod Phys (3)			MCEE-360 Semi Dev (4)		MCEE-505 Lith Mat (3)		MCEE-550 CMOS IC (4)	MCEE-515 NanoLith (3)	
MCEE-101 Intro nE (3)	CMPR-271 Comp Prob Solving (3)		MATH-231 Diff. Eq. (3)	MCEE-201 IC Tech (3)			MCEE-502 VLSI Proc (3)		EEEE-482 Elect II (4)		Prof. Elective (3)	Prof. Elective (3)	
Writing (3)	EEEE-120 Digital Sys. (3)		EEEE-281 Circuits I (3)	EEEE-282 Circuits II (3)			EEEE-381 Elect I (3)		EEEE-353 Linear Sys (4)		Free Elective (3)	Immersion 2 (3)	
Year One ACSC 010 (0)	Perspective I (3)		Perspective II (3)	Perspective III (3)			Free Elective (3)		Immersion 1 (3)		MCEE-205 Stats DOE (3)	Immersion 3 (3)	
16 Sch*	17 Sch*		17 Sch*	15 Sch*		16 Sch*		17 Sch*		16 Sch*	15 Sch*		

Class and Co-op Schedule

Year	Fall	Spring	Summer	Credits
1	Class (16)	Class (17)	Vacation	33 Sch*
2	Class (17)	Class (15) (EGEN-099)	Vacation or Co-op	32 Sch*
3	Co-op	Class (16)	Co-op	16 Sch*
4	Class (17)	Co-op	Co-op	17 Sch*
5	Class (16)	Class (15)	Job	31 Sch*

Total Credits: 129 Semester credit hours (Sch)

\* Semester Credit Hours

Math

Physics

Microelectronics

Electrical Engineering

Liberal Arts

Free Electives

Microelectronic Engineering Course with Lab

Fall or Spring of  
Year 2  
EGEN-99  
Eng. Coop Prep. (0)

Students are required to  
take two different  
Wellness classes before  
graduation