

# ELECTRICAL ENGINEERING (GIEP) - CLASS OF 2020

## Freshman Year Fall Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
ECN 201	Principles of Microeconomics (A2)	3	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141	Intro Calculus with Analytical Geometry (A1, B3)	4	
GER 111	Intensive Beginning German I	4	
		<b>16</b>	

## Freshman Year Spring Semester

Course Code	Description	Cr	
CSC 200	Computer Problem Solving	4	
EGR 106	Foundations of Engineering II (A4)	2	
ELE 101	Intro to Electrical Engineering	1	
MTH 142	Intermed Calc with Analytic Geom (B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
GER 112	Intensive Beginning German II	4	
		<b>19</b>	

## Sophomore Year Fall Semester

Course Code	Description	Cr	
ELE 201	Digital Circuits Design	3	
ELE 202	Digital Circuits Design Lab	1	
MTH 362	Advanced Engineering Mathematics I	3	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
	General Education Outcome(s)	3	
GER 113	Intensive Intermediate German I	4	
		<b>18</b>	

## Sophomore Year Spring Semester

Course Code	Description	Cr	
ELE 205	Microprocessors	2	
ELE 206	Microprocessor Lab	1	
ELE 212	Linear Circuit Theory	3	
ELE 215	Linear Circuits Lab	2	
MTH 243	Calculus for Funcs. of Sev. Vars. (A1, B3)	3	
PHY 205	Elementary Physics III Lec (A1, B3)	3	
PHY 206	Elementary Physics III Lab (A1, B3)	1	
GER 114	Intensive Intermediate German II	4	
		<b>19</b>	

## Junior Year Fall Semester

Course Code	Description	Cr	
ELE 313	Linear Systems	3	
ELE 331	Intro to Solid State Devices	4	
ELE 338	Electronics I	3	
ELE 339	Electronics I Lab	1	
MTH 451	Intro to Probability and Statistics <i>or</i>	3	
<i>or</i> ISE 311	Probability and Statistics for Engineers		
GER 205	Conversation and Composition	3	
		<b>17</b>	

## Junior Year Spring Semester

Course Code	Description	Cr	
ELE 301	Electronic Design Automation	3	
ELE 302	Electronic Design Automation Lab	1	
ELE 314	Linear Systems and Signals	3	
ELE 322	Electromagnetic Fields I	4	
ELE 343	Electronics II	3	
ELE 344	Electronics II Lab	1	
GER 206	Conversation and Composition	3	
		<b>18</b>	

## Semester Abroad

Course Code	Description	Cr	
GER/EGR 411	Technical German/Professional Elective	3	
GER 3XX		4	
GER 3XX or GER 4XX		3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		<b>16</b>	

## International Internship Semester

Course Code	Description	Cr	
GER 315-316	Language Study Abroad	3-6	
		<b>3-6</b>	

## Senior Year Fall Semester

Course Code	Description	Cr	
ELE 400	Intro to Professional Practice	1	
ELE 480	Capstone Design I	3	
	Approved Professional Elective**	4	
	Approved Professional Elective**	3-4	
	General Education Outcome(s)*	3	
GER 4XX		3	
		<b>17-18</b>	

## Senior Year Spring Semester

Course Code	Description	Cr	
ELE 481	Capstone Design II	3	
	Approved Professional Elective**	3-4	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
GER 4XX		3	
		<b>18-19</b>	

**Specified Math, Science, and Engineering Courses**

Introductory Engineering					
Sem	Course	Cr	Grade	QP	Note
	EGR 105 (A4)	1			
	EGR 106 (A4)	2			
		3			

Mathematics					
Sem	Course	Cr	Grade	QP	Note
	MTH 141 (A1 & B3)	4			
	MTH 142 (B3)	4			
	MTH 243 (A1 & B3)	3			
	MTH 362	3			
	MTH 451 or ISE 311	3			
		17			

Natural Sciences					
Sem	Course	Cr	Grade	QP	Note
	CHM 101 (A1)	3			
	CHM 102	1			
	PHY 203 (A1)	3			
	PHY 273 (A1)	1			
	PHY 204 (A1)	3			
	PHY 274 (A1)	1			
		12			

Computer Science					
Sem	Course	Cr	Grade	QP	Note
	CSC 200	4			
		4			

Engineering Science and Design (Major)					
Sem	Course	Cr	Grade	QP	Note
	ELE 101	1			
	ELE 201	3			
	ELE 202	1			
	ELE 205	2			
	ELE 206	1			
	ELE 212	3			
	ELE 215	2			
	ELE 301	3			
	ELE 302	1			
	ELE 313	3			
	ELE 314	3			
	ELE 322	4			
	ELE 331	4			
	ELE 338	3			
	ELE 339	1			
	ELE 343	3			
	ELE 344	1			
	ELE 400	1			
	ELE 480 [capstone]	3			
	ELE 481 [capstone]	3			
		46			

**Professional Elective					
Sem	Course	Cr	Grade	QP	Note
		4			
		3-4			
		3-4			
		3-4			
		13-16			

\* **General Education Outcomes:** at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR (ie: only four 3-credit GER classes OR three 4-credit GER classes may be used to fulfill General Education Outcomes). General education courses may also be used to meet requirements of your major(s) or minor(s) when appropriate.

\*\***Professional Electives:** Four (4) courses that satisfy **both** of the following: (a) **Three (3)** from ELE 401/402, 423, 425, 432, 435/436, 444/445, 447/448, 457, 458/459 of which at least **one (1)** must be from 401/402, 423, 432, 444/445, 447/448, and at least **one (1)** must include a lab component (401/402, 435/436, 444/445, 447/448, 458/459). (b) The **fourth** course must be from: an additional course from (a) above; BME/ELE 461; ELE 405/406, 408/409, 437, 438, 470; or with prior approval of the ECBE department chairperson, any 300- or 400-level College of Engineering course not required by the ELE major.

German Language Requirements					
Sem	Course	Cr	Gr	QP	Note
GER 101, 102, & 111 will not count toward major requirements.					
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER ____				
	GER 4__	3			
6 Credits in Literature, at least 3 at 400-level					
	GER ____	3			
	GER 4__	3			
		30			

General Education Outcome Audit		
	Course	Credit
<b>Knowledge</b>		
A1. STEM	CHM & PHY (see above)	15
A2. Social & Behavioral Sciences	ECN 201	3
A3. Humanities	GER 205/206 (suggested)	3
A4. Arts & Design	EGR 105 & 106	3
<b>Competences</b>		
B1. Write Effectively		
B2. Communicate Effectively		
B3. Mathematical, statistical, or computational strategies	MTH (see above)	11
B4. Information literacy		
<b>Responsibilities</b>		
C1. Civic knowledge & responsibilities		
C2. Global responsibilities	GER 205/206 (suggested)	3
C3. Diversity and Inclusion		
<b>Inegrate &amp; Apply</b>		
D1. Ability to synthesize	TBD from major requirements	3
<b>Grand Challenge</b>		
G. Check that at least one course of your 40 credits is an approved "G" course		
Total General Education Outcome Credits		40