

NAME: \_\_\_\_\_

E-mail: \_\_\_\_\_

ENGR-1100	Intro. to Eng. Analysis	4		ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1	
ENGR-1310	Intro. Eng. Electronics <sup>1</sup> <i>or</i>	1		MATH-1020	Calculus II	4	
ENGR-1300	Eng. Processes						
CSCI-1100	Computer Science I	4		CHEM-1100	Chemistry I	4	
MATH-1010	Calculus I	4		PHYS-1100	Physics I	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2050	Intro. to Eng. Design	4		ENGR-2350	Embedded Control	4	
MATH-2400	Intro. to Differential Eqns.	4		ECSE-2010	Electric Circuits	4	
PHYS-1200	Physics II	4		ECSE-2610	Cptr. Comp. & Operations	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ECSE-2050	Intro. to Electronics	4		ECSE-2100	Fields & Waves I	4	
ECSE-2410	Signals & Systems	4		ECSE-2210	Microelectronics Tech.	4	
MATH-2010	Multivar Calc & Matrix Alg	4			Multidisc. Elective <sup>1</sup>	4	
	Hum. or Soc. Sci. Elective	4			Free Elective <sup>1,3,4</sup>	3-4	
					Professional Devel. II <sup>1,2</sup>	2	
ENGR-4010	Professional Devel. III <sup>1</sup>	1			Restricted Elective <sup>1</sup>	3	
	Design Elective <sup>1</sup>	3			Concentration Elective 2	3	
ECSE-4500	Prob. for Eng. Appl. <sup>1</sup>	4			Free Elective <sup>1,3</sup>	3-4	
	Lab Elective	3			Free Elective <sup>1,3</sup>	3-4	
	Concentration Elective 1	3			Free Elective (if needed) <sup>3</sup>		

<sup>1</sup> May be taken either term.<sup>2</sup> May be taken in the third year<sup>3</sup> The free electives must total to at least 12 credits.<sup>4</sup> Students are encouraged to select a life science course, such as BIOL-1010.**128 credits minimum****RESTRICTED ELECTIVE**

EPOW-xxxx, ECSE-xxxx or ENGR-4xxx.

**MULTIDISCIPLINARY ELECTIVES**ENGR-1600 Materials Science for Eng.  
ENGR-2090 Engineering Dynamics  
ENGR-2250 Thermal & Fluids Eng. I  
ENGR-2530 Strength of Materials**CONCENTRATION ELECTIVES**

Students must select two courses in one of the concentration areas. See the ECSE Homepage for areas and course lists.

**LAB ELECTIVES**ENGR-4710 Adv. Manufacturing Lab I  
EPOW-4030 Electric Power Eng. Lab  
ECSE-4090 Mechatronics  
ECSE-4220 VLSI Design  
ECSE-4690 Experimental Networking  
ECSE-4760 Real-Time Cntrl & Comm.  
ECSE-4770 Cptr H'ware Design  
ECSE-4790 Microprocessor Systems**DESIGN ELECTIVES**MANE-4220 Inventor's Studio (F, S)  
ECSE-4900 ECSE Design (F, S)  
ECSE-4980 Senior Design Project (F,S)  
ECSE-4780 Adv. Cptr. H'ware Des (S)  
EPOW-4850 EPE Design (S)

NAME: \_\_\_\_\_

E-mail: \_\_\_\_\_

ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1		MATH-2800	Intro. to Discrete Structures	4	
ENGR-1100	Intro. to Eng Analysis	4		ENGR-1310 ENGR-1300	Intro. Eng. Electronics <sup>1</sup> <i>or</i> Eng. Processes	1	
MATH-1010	Calculus I	4		MATH-1020	Calculus II	4	
CSCI-1100	Computer Science I	4		CSCI-1200	Computer Science II	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2350	Embedded Control	4		ECSE-2660	Cptr Arch, Nets, & Op Sys	4	
ECSE-2610	Cptr. Comp. & Operations	4		MATH-2400	Intro. to Differential Eqns	4	
CSCI-2300	Data Struct & Algorithms	4		PHYS-1200	Physics II	4	
PHYS-1100	Physics I	4		CHEM-1100	Chemistry I	4	
ENGR-2050	Intro. to Eng. Design	4		ECSE-2410	Signals & Systems	4	
ECSE-2010	Electric Circuits	4			Software Eng Elective	3-4	
	Multidisc Elective <sup>1</sup>	4			Free Elective <sup>1,3,4</sup>	3-4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
					Professional Devel. II <sup>1,2</sup>	2	
ENGR-4010	Professional Devel. III <sup>1</sup>	1			Restricted Elective <sup>1</sup>	3-4	
	Design Elective <sup>1</sup>	3			Concentration Elective 2	3-4	
ECSE-4500	Prob. for Eng. Appl. <sup>1</sup>	4			Free Elective <sup>1,3</sup>	3-4	
	Concentration Elective 1	3-4			Free Elective <sup>1,3</sup>	3-4	
	Hum. Or Soc. Sci. Elective	4			Free Elective (if needed) <sup>3</sup>		

<sup>1</sup> May be taken either term.

<sup>2</sup> May be taken in the third year

<sup>3</sup> The free electives must total at least 12 credits.

<sup>4</sup> Students are encouraged to select a life science course, such as BIOL-1010.

**128 credits minimum**

**RESTRICTED ELECTIVE**

ECSE-xxxx , CSCI-xxxx or ENGR-4xxx.

**MULTIDISCIPLINARY ELECTIVES**

ENGR-1600 Materials Science for Eng.  
ENGR-2090 Engineering Dynamics  
ENGR-2250 Thermal & Fluids Eng. I  
ENGR-2530 Strength of Materials

**CONCENTRATION ELECTIVES**

Students must select two courses in one of the concentration areas. See the ECSE Homepage for areas and course lists.

**SOFTWARE ENGINEERING ELECTIVES**

ECSE-4690 Experimental Networking  
ECSE-4750 Computer Graphics  
CSCI-4380 Database Systems  
CSCI-4440 Software Dsg & Doc  
CSCI-4600 Intro. Graphical Interfaces

**DESIGN ELECTIVES**

MANE-4220 Inventor's Studio (F, S)  
ECSE-4900 ECSE Design (F, S)  
ECSE-4980 Senior Design Project (F,S)  
ECSE-4780 Adv. Cptr. H'ware Des (S)  
EPOW-4850 EPE Design (S)

NAME: \_\_\_\_\_

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ENGR-1100	Intro. to Eng. Analysis	4		ENGR-1300	Eng. Processes <sup>1, 3</sup>	1	
ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1		MATH-1020	Calculus II	4	
CHEM-1100	Chemistry I	4		ENGR-1600	Materials Science for Eng.	4	
MATH-1010	Calculus I	4		PHYS-1100	Physics I	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2050	Intro. to Eng. Design	4		CSCI-1190	Beginning C Prog for Eng	1	
MATH-2400	Intro. to Differential Eqns.	4		ENGR-2600	Model & Anal Uncertainty	3	
PHYS-1200	Physics II	4		MANE-4050	Model & Cont of Dynamic Systems	4	
	Hum. or Soc. Sci. Elective	4		ECSE-2010	Electric Circuits	4	
					Hum or Soc Sci Elective	4	
ENGR-2250	Thermal & Fluids Eng I	4		ENGR-2350	Embedded Control	4	
ECSE-2050 or ENGR-4300	Intro. to. Electronics or Electronic Instrumentation	4		ECSE-2410	Signals & Systems	4	
ECSE-2100	Fields & Waves I	4		EPOW-4020	Electromechanics	3	
EPOW-4010	Power Eng Fundamentals	4			Free Elective <sup>1,5</sup>	3-4	
	Professional Devel. II <sup>1,2</sup>	2		ENGR-4010	Professional Devel. III <sup>1</sup>	1	
EPOW-4080	Semiconductor Pwr Electron	3		EPOW-4850	Electric Power Eng Design	3	
	Technical Elective <sup>4</sup>	3		EPOW-4030	EPE Laboratory	4	
	Hum or Soc Sci Elective	4			Technical Elective <sup>4</sup>	3	
	Free Elective	3-4			Free Elective	3-4	

<sup>1</sup> May be taken either term.<sup>2</sup> May be taken in the third year<sup>3</sup> May be replaced by ENGR-1310<sup>4</sup> Any course in engineering or science at the 2000 level or higher.<sup>5</sup> Students are encouraged to select a life science course, such as BIOL-1010.**128 credits minimum****CONCENTRATION IN POWER ELECTRONICS SYSTEMS**

For EPOW majors:

Required Courses: EPOW-4080 and EPOW-4850

One of the following: ECSE-4250, ECSE-4290, MANE-4490, MANE-4250

NAME: \_\_\_\_\_

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ENGR-1100	Intro. to Eng. Analysis	4		ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1	
ENGR-1310 ENGR-1300	Intro. Eng. Electronics <sup>1</sup> or Eng. Processes	1		MATH-1020	Calculus II	4	
CSCI-1100	Computer Science I	4		CHEM-1100	Chemistry I	4	
MATH-1010	Calculus I	4		PHYS-1100	Physics I	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2050	Intro. to Eng. Design	4		ENGR-2350	Embedded Control	4	
MATH-2400	Intro. to Differential Eqns.	4		ECSE-2010	Electric Circuits	4	
PHYS-1200	Physics II	4		ECSE-2610	Cptr. Comp. & Operations	4	
BIOL-1010	Intro. to Biology <sup>1</sup>	4		MATH-2010	Multivar. Calc. & Matrix Alg.	4	
ECSE-2050	Intro. to Electronics	4		ECSE-2210	Microelectronics Tech.	4	
ECSE-2410	Signals & Systems <sup>1</sup>	4		PHYS-2350	Experimental Physics	4	
PHYS-2100	Intro. Theoretical Physics	4		PHYS-4210	Electromagnetic Theory	4	
MATH-4600	Advanced Calculus	4			Hum. or Soc. Sci. Elective	4	
	Hum. or Soc. Sci. Elective	4					
ECSE-4010	Professional Devel. III <sup>1</sup>	1			Professional Devel. II <sup>1,2</sup>	2	
ECSE-4220	VLSI Design	3		ECSE-4500	Prob. for Eng. Applications	4	
PHYS-2330	Intermediate Mechanics	4		PHYS-4420	Thermody. & Stat. Mechanics	4	
PHYS-2510	Quantum Physics	4		PHYS-4370	Research Participation	4	
ECSE-4900	ECSE Design <sup>1</sup>	3			Hum. or Soc. Sci. Elective	4	
	Microelectronics Elective <sup>1</sup>	3-4					

<sup>1</sup> May be taken either term.<sup>2</sup> May be taken in the third year**138 credits minimum**

\* EE must be your first named major. Otherwise an additional 2 credit hours of H&amp;SS are required.

**MICROELECTRONICS ELECTIVE**

ECSE-4080 Semiconductor Pwr Electronics

ECSE-4250 Int. Ckt. Process &amp; Design

ECSE-4720 Solid-State Physics

NAME: \_\_\_\_\_

E-mail: \_\_\_\_\_

ENGR-1100	Intro. to Eng. Analysis	4		ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1	
ENGR-1310	Intro. Eng. Electronics <sup>1</sup> <i>or</i>	1		MATH-1020	Calculus II	4	
ENGR-1300	Eng. Processes						
MATH-1010	Calculus I	4		MATH-2800	Intro. Discrete Structures	4	
CSCI-1100	Computer Science I	4		CSCI-1200	Computer Science II	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2350	Embedded Control	4		ECSE-2660	Cptr Arch, Nets, & Op Sys	4	
ECSE-2610	Cptr. Comp. & Operations	4		MATH-2400	Intro. to Differential Eqns	4	
CSCI-2300	Data Struct. & Algorithms	4		PHYS-1200	Physics II	4	
PHYS-1100	Physics I	4		CHEM-1100	Chemistry I	4	
ENGR-2050	Intro. to Eng. Design	4		ECSE-2050	Intro. to Electronics	4	
ECSE-2010	Electric Circuits	4		ECSE-2100	Fields & Waves I	4	
	Multidisc. Elective <sup>1</sup>	4		ECSE-2410	Signals & Systems	4	
MATH-2010	Multivar Calc & Matrix Alg <sup>1</sup>	4			Hum. or Soc. Sci. Elective	4	
	Hum. or Soc. Sci. Elective	4					
ENGR-4010	Professional Devel. III <sup>1</sup>	1			Professional Devel. II <sup>1,2</sup>	2	
ECSE-2210	Microelectronics Tech.	4		ECSE-4500	Prob. for Eng. Appl. <sup>1</sup>	4	
	Design Elective <sup>1</sup>	3			Restricted Elective <sup>1</sup>	3-4	
	Software Eng Elective	3-4			Concentration Elective 2	3-4	
	Lab Elective <sup>1</sup>	3			Hum. or Soc. Sci. Elective	4	
	Concentration Elective 1	3-4					

<sup>1</sup> May be taken either term.<sup>2</sup> May be taken in the third year**135 credits minimum****RESTRICTED ELECTIVE**EPOW-xxxx, ECSE-xxxx, CSCI-xxxx  
or ENGR-4xxx.**MULTIDISCIPLINARY  
ELECTIVES**ENGR-1600 Materials Science for Eng.  
ENGR-2090 Engineering Dynamics  
ENGR-2250 Thermal & Fluids Eng. I  
ENGR-2530 Strength of Materials**CONCENTRATION ELECTIVES**Students must select two courses in one  
of the concentration areas. See the  
ECSE Homepage for areas and course  
lists.**SOFTWARE ENGINEERING  
ELECTIVES**ECSE-4690 Experimental Networking  
ECSE-4750 Computer Graphics  
CSCI-4380 Database Systems  
CSCI-4440 Software Dsgn & Doc  
CSCI-4600 Intro. Graphical Interfaces**LAB ELECTIVES**ECSE-4690 Experimental Networking  
ENGR-4710 Adv Manufacturing Lab I  
EPOW-4030 Electric Power Eng. Lab  
ECSE-4090 Mechatronics  
ECSE-4220 VLSI Design  
ECSE-4760 Real-Time Cntrl & Comm.  
ECSE-4770 Cptr. H'ware Design  
ECSE-4790 Microprocessr Sys**DESIGN ELECTIVES**MANE-4220 Inventor's Studio (F, S)  
ECSE-4900 ECSE Design (F, S)  
ECSE-4980 Senior Design Project (F,S)  
ECSE-4780 Adv. Cptr. H'ware Des (S)  
EPOW-4850 EPE Design (S)

CSE AND COMPUTER SCIENCE\* DUAL MAJOR CURRICULUM CHECKLIST  
2008

Class of

NAME: \_\_\_\_\_

E-mail: \_\_\_\_\_

ENGR-1100	Intro. to Eng. Analysis	4		MATH-2800	Intro. to Discrete Structures	4	
ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1		ENGR-1310 ENGR-1300	Intro. Eng. Electronics <sup>1</sup> <i>or</i> Eng. Processes	1	
MATH-1010	Calculus I	4		MATH-1020	Calculus II	4	
CSCI-1100	Computer Science I	4		CSCI-1200	Computer Science II	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2350	Embedded Control	4		ECSE-2660	Cptr Arch, Nets, & Op Sys	4	
ECSE-2610	Cptr. Comp. & Operations	4		CHEM-1100	Chemistry I	4	
CSCI-2300	Data Structures & Algorithms	4		MATH-2400	Intro. to Differential Eqns	4	
PHYS-1100	Physics I	4		PHYS-1200	Physics II	4	
ENGR-2050	Intro. to Eng. Design	4		ECSE-2410	Signals & Systems	4	
ECSE-2010	Electric Circuits	4		CSCI-4430	Programming Languages	4	
CSCI-2400	Models of Computation	4		CSCI-4210	Operating Systems	4	
BIOL-1010	Intro. to Biology <sup>1</sup>	4			Multidisciplinary Elective	4	
	Hum. or Soc. Sci. Elective <sup>1</sup>	4					
ENGR-4010	Professional Devel. III <sup>1</sup>	1			Professional Devel. II <sup>1,3</sup>	2	
	Design Elective <sup>1</sup>	3		ECSE-4500	Prob. for Eng. Appl. <sup>1</sup>	4	
CSCI-4440	Software Design & Doc.	4			Concentration Elective 2 <sup>2</sup>	3-4	
	Concentration Elective 1 <sup>2</sup>	3-4			CSE/CS Elective <sup>2</sup>	3-4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	

<sup>1</sup> May be taken either term.

<sup>2</sup> Concentration Elective 1, Concentration Elective 2, Design Elective and CSE/CS Elective must contain at least 11 credit hours that satisfy the CSE/CS Elective description given below. Some choices for Concentration and Design Electives may require that additional CSE/CS Electives be taken to meet this requirement.

<sup>3</sup> May be taken in the third year

\* CSE must be your first named major. Otherwise an additional 2 credit hours of H&SS are required.

**133 credits minimum**

**MULTIDISCIPLINARY ELECTIVES**

ENGR-1600 Materials Science for Eng.  
ENGR-2090 Engineering Dynamics  
ENGR-2250 Thermal & Fluids Eng. I  
ENGR-2530 Strength of Materials

**CONCENTRATION ELECTIVES**

Students must select two courses in one of the concentration areas. See the ECSE Homepage for areas and course lists.

**CSE/CS ELECTIVE**

Any course numbered CSCI-4xxx, CSCI-6xxx, ECSE-46xx or ECSE-47xx may be used, excluding ECSE-4630, ECSE-4640, ECSE-4720 and reading and independent study courses. ECSE-4490 may also fulfill this requirement.

**DESIGN ELECTIVES**

ENGR-4060 Inventor's Studio (F, S)  
ECSE-4900 ECSE Design (F, S)  
ECSE-4980 Senior Design Project (F,S)  
ECSE-4780 Adv. Cptr. H'ware Des (S)  
EPOW-4850 EPE Design (S)

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ENGR-1100	Intro. to Eng. Analysis	4		ENGR-1200	Eng. Graphics & CAD <sup>1</sup>	1	
ENGR-1310 ENGR-1300	Intro. Eng. Electronics <sup>1</sup> <i>or</i> Eng. Processes	1		MATH-1020	Calculus II	4	
CSCI-1100	Computer Science I	4		CHEM-1100	Chemistry I	4	
MATH-1010	Calculus I	4		PHYS-1100	Physics I	4	
	Hum. or Soc. Sci. Elective	4			Hum. or Soc. Sci. Elective	4	
ENGR-2050	Intro. to Eng. Design	4		ENGR-2350	Embedded Control	4	
MATH-2400	Intro. to Differential Eqns.	4		ECSE-2010	Electric Circuits	4	
PHYS-1200	Physics II	4		MANE-4050	Modeling & Control of Dynamic Systems	4	
ENGR-1600	Materials Science for Eng.	4		ECSE-2610	Cptr. Comp. & Operations	4	
ECSE-2050 or ENGR-4300	Intro. to Electronics or Electronic Instrumentation	4		ECSE-2100	Fields & Waves I	4	
EPOW-4010	Power Eng. Fundamentals	4		ECSE-2210	Microelectronics Tech.	4	
MATH-2010	Multivar Calc & Matrix Alg	4		EPOW-4020	Electromechanics	3	
ENGR-2250	Thermal and Fluids Eng. I	4			Hum. or Soc. Sci. Elective	4	
					Professional Devel. II <sup>1,2</sup>	2	
ENGR-4010	Professional Devel. III <sup>1</sup>	1		EPOW-4850	Electric Power Design	3	
ECSE-4500	Prob. for Eng. Appl. <sup>1</sup>	4		EPOW-4030	EPE Laboratory	4	
EPOW-4080	Semiconductor Pwr. Elec.	3			Hum. or Soc. Sci. Elective	4	
ECSE-2410	Signals & Systems	4			Free Elective <sup>1,5</sup>	3-4	
	Hum. or Soc. Sci. Elective	4			Free Elective	3-4	

<sup>1</sup> May be taken either term.

<sup>2</sup> May be taken in the third year

<sup>5</sup> Students are encouraged to select a life science course, such as BIOL-1010.

**132 credits minimum**