

TRANSFER EVALUATION AND CHECK-OFF FORM
ELECTRICAL ENGINEERING PROGRAM

SEMESTER 1 (15 cr)	MU CR	TR CR	GR	COMMENT
CHEM 1001 ^b	4			Core SN
EECE 1953	1			
ENGL 1001 ^f	3			Core R - 1
GEEN 1200	3			
MATH 1450 ^b	4			Core MR
SEMESTER 3 (19 cr)				
EECE 2010 ¹	3			
EECE 2015 ¹	1			
EECE 2710 ¹	3			
GEEN 2952	1			
MATH 2450	4			
PHIL 1001 ^b	3			HN&E-1 (UCCS)
PHYS 1003 ^b	4			
SEMESTER 5 (17 cr)				
EECE 3010 ¹	3			
EECE 3015 ¹	2			
ELEN 3020 ¹	3			
ELEN 3110 ¹	3			
PHIL 2310 ^b	3			HN&E-2 (UCCS) (PHIL 104)
THEO 1001 ^b or Core elective ^c	3			
SEMESTER 7 (17 cr)				
ELEN 3035	2			
ELEN 4920	3			
EE Elective ²	3			
EE Elective ²	3			
EE Elective ²	3			
Theology Elective ^e	3			

SEMESTER 2 (17 cr)	MU CR	TR CR	GR	COMMENT
Core elective ^c or THEO 1001 ^b	3			
Core Rhetoric 2 ^f	3			
EECE 1954	1			
EECE 1610	3			
GEEN 1210	3			
MATH 1451 ^b	4			
SEMESTER 4 (18 cr)				
EECE 2030 ¹	3			
EECE 2035	1			
ELEN 2020 ¹	3			
ELEN 2040	3			
MATH 2451	4			
PHYS 1004 ^b	4			
SEMESTER 6 (17 cr)				
Core Elective ^c	3			
ELEN 3025	2			
ELEN 3030 ¹	3			
EE Elective ²	3			
EE Elective ²	3			
MATH 4720	3			
SEMESTER 8 (15 cr)				
Core Elective ^c	3			
Core Elec ^c /Free Elec ^d	3			
EE Elective ²	3			
ELEN 4998	3			
SCI/MATH Elec ³	3			
TOTAL CREDITS	135			

UCCS Requirement	Course No.	EE Electives	Course No.	Course No.	Course No.
Diverse Cultures (DC)		Electronic Devices & Systems			
Histories of Cul & Soc (HCS)		Signals, Systems & Control			
Indiv & Soc Behav (ISB)		EM & Communications			
Lit & Perform Arts (LPA)		Power & Energy			
		Computer HW & SW			

DEGREE REQUIREMENTS INCLUDE:

- Every required course
- Approved elective program.
- A "C" (2.0) or more average at Marquette
- A "C" (2.0) or more average in Engineering courses
- A minimum of 135 semester hours
- No course may be taken for credit without the required prerequisite(s)
- All substitutions and/or departures from stated curriculum must be approved in writing in advance

Notes:

University Core of Common Studies:

- (a) Refer to the College of Engineering section of this bulletin for details relating to footnotes b, c, d, e, and f.

~~~ College Notes ~~~~

- (b) This course satisfies requirements of the University Core of Common Studies.
- (c) The Core Electives must satisfy University Core Requirements in the following four Knowledge Areas: Diverse Cultures, Histories of Cultures and Societies, Individual and Social Behavior, and Literature/Performing Arts. See the section on University Core of Common Studies for lists of acceptable courses. Only one of these courses can be a dual application course.
- (d) If the previous Core Electives span all four Knowledge Areas (as listed in the previous footnote), a three-credit free elective may be chosen. This situation will exist if one of the student's core electives is a dual application core course, as described in the section on the University Core of Common Studies.
- (e) The Theology Elective must be selected from the list of approved Core courses in the Theology Knowledge Area. See the section on University Core of Common Studies.
- (f) The Core Rhetoric 1 requirement is to be fulfilled by ENGL 1001; the Core Rhetoric 2 requirement is to be fulfilled by either ENGL 1002 or COMM 1100.

#### ***Department notes:***

- (1) A C or better grade is required in this course to meet the prerequisites for subsequent computer and/or electrical engineering required courses.
- (2) The six EE Electives must satisfy both a breadth and a depth requirement. To satisfy the breadth requirement, the student must take EE Electives in at least three of the following five areas: Device Systems; Signals, Systems and Controls; Electromagnetic Fields and Communication, Power and Energy Systems; and Computer Hardware and Software. To satisfy the depth requirement, the student must take at least three EE Electives in one of the aforementioned areas. A course listed in multiple concentration areas may be counted toward only one elective requirement.
- (3) The science/math elective can be fulfilled with any upper division math or physics course or any biology or chemistry course for which the prerequisite requirements are met.

## Elective Choices

**The breadth requirement:** Students must choose at least one course from at least 3 different concentration areas.

**The depth requirement:** Students must choose at least 3 courses from one concentration area.

**Courses listed in multiple concentration areas count in ONLY one concentration area.**

Concentration areas:

|                                          |           |                                                       |
|------------------------------------------|-----------|-------------------------------------------------------|
| Electronic Devices and Systems           |           |                                                       |
|                                          | EECE 4410 | Integrated Microelectronic Circuits                   |
|                                          | EECE 4740 | Advanced VHDL and FPGA Design                         |
|                                          | ELEN 4430 | Physical Principles of Solid State Devices            |
|                                          | ELEN 4450 | Surface Acoustic Wave Devices and Systems             |
|                                          | ELEN 4460 | Sensor Devices: Theory, Design, and Application       |
|                                          | ELEN 4490 | Developments in Devices                               |
|                                          | ELEN 4565 | Optical Fiber Communications                          |
| Signals, Systems and Control             |           |                                                       |
|                                          | ELEN 4310 | Control Systems                                       |
|                                          | ELEN 4320 | Digital Control Systems                               |
|                                          | ELEN 4390 | Developments in Control                               |
|                                          | EECE 4510 | Digital Signal Processing                             |
|                                          | ELEN 4550 | Developments in Signal Processing                     |
|                                          | ELEN 4560 | Introduction to Communication Systems                 |
|                                          | ELEN 4565 | Optical Fiber Communications                          |
|                                          | ELEN 4590 | Developments in Communications                        |
| Electromagnetic Fields and Communication |           |                                                       |
|                                          | ELEN 3120 | Electromagnetic Fields 2                              |
|                                          | ELEN 4110 | Microwave Engineering                                 |
|                                          | ELEN 4130 | Antenna Theory and Design                             |
|                                          | ELEN 4150 | Applied Finite Elements in Electromagnetics           |
|                                          | ELEN 4190 | Developments in Electromagnetics                      |
|                                          | EECE 4510 | Digital Signal Processing                             |
|                                          | ELEN 4560 | Introduction to Communication Systems                 |
|                                          | ELEN 4565 | Optical Fiber Communications                          |
|                                          | ELEN 4570 | Wireless Communications                               |
|                                          | ELEN 4590 | Developments in Communications                        |
| Power and Energy Systems                 |           |                                                       |
|                                          | ELEN 3210 | Electric Drives                                       |
|                                          | ELEN 4210 | Design & Analysis of Electric Motor Drive Systems     |
|                                          | ELEN 4220 | Power Electronics for Renewable Energy Systems        |
|                                          | ELEN 4230 | Renewable and Legacy Electric Energy Systems Analysis |
|                                          | ELEN 4240 | Protection & Monitoring of Electric Energy Systems    |
|                                          | ELEN 4250 | Transients in Electric Energy Systems and Devices     |
|                                          | ELEN 4290 | Developments in Energy and Power                      |
| Computer Hardware & Software             |           |                                                       |
|                                          | COEN 4620 | Modern Programming Practices                          |
|                                          | COEN 4630 | Software Testing                                      |
|                                          | COEN 4710 | Computer Hardware                                     |
|                                          | COEN 4720 | Embedded Systems Design                               |
|                                          | COEN 4730 | Computer Architecture                                 |
|                                          | COEN 4810 | Database Applications                                 |
|                                          | COEN 4820 | Operating Systems and Networking                      |
|                                          | COEN 4830 | Introduction to Computer Graphics                     |
|                                          | COEN 4840 | Computer Security                                     |
|                                          | COEN 4850 | Introduction to Intelligent Systems                   |
|                                          | COEN 4860 | Introduction to Neural Networks and Fuzzy Systems     |
|                                          | COEN 4870 | Evolutionary Computation                              |