Computer Engineering Pre-Med Track Flowchart

Crd Count
15  Writing and Rhetoric I ¹
ENC 1101

First Year Experience ²
SLS 1501

Calculus I for Eng. ³
MAC 2281 or MAC 2311

CHM 1045 & L - Gen. Chemistry & Lab ⁴
or
BSC 2010 & L – Gen. Biology & Lab ⁹

Calculi (Group I)

Humanity I ⁰
(Group I)

Humanity II ⁰
(Group II)
Suggested: WOH 2001
World Civilizations

Physics with Calculus I
PHY 2048

Engineering Orientation
EGN 1002

Evaluation of Eng. Data
ESI 3215

Differential Equations
MAP 2302

Circuits Analysis & Circuits Lab
EEL 3110 & EEL 3110L

C++ Programming for Embedded Systems
EEL 3370

Introduction to Linear Systems
EEL 3120

Programming Embedded Systems
EEL 4730

Logic Design I & Lab ³
EEL 3712 & L

Computer Design
EEL 4709C

Embedded Computing
EEL 4740

Senior Design I ⁶
EEL 4920

Senior Design II ⁷
EEL 4921C

Public Speaking
SPC 2608 ⁵

SLS 1501

COT 3100 – Discrete Structures
MAD 2104 – Discrete Math

Concentration Elec.
EEE/EEL XXXX

Legend:
- Prereq (enforced)
- Coreq (enforced)

Other Requirements (Must be completed for graduation):
GRW1:_____  GRW2:_____  Foreign Language:_____  9 Summer Credit Hours:_____  UCC:_____  Total Credits:_____ / 128

GL-F:_____  GL-D:_____  Concentration I:_____/9crd  Pre-Med Concentration:_____/24crd  Concentration Total:_____/34crd  CL:_____

¹ List of alternative courses can be found at: https://acis.fiu.edu/offices-services/advising/university-core-curriculum-updated-6-17-20.pdf
² Students w/ 30 transfer credits may be able to substitute ENC 1101 & ENC 1102 with: 1) ENC 2304 and 2) one of the following: ENC 3213, ENC 3249, ENC 3311 or ENC 3314
³ Students w/ 30 transfer credits may be able to substitute SLS 1501 & EGN 1002 with an advisor approved 3-credit concentration elective
⁴ Prerequisite: MAC 1105 + MAC 1147 or (MAC 1114 + MAC 1140)
⁵ Prerequisite: Second year high school algebra or MAC 1105 College Algebra
⁶ Students who transfer a UCC Art (that is not Public Speaking) can replace one 3-credit concentration elective with SPC 2608 – Public Speaking.
⁷ Students are required to complete at least 100 credits towards engineering degree, including ECE core courses and Computer Engineering Program Core before EEL 4920 registration.
⁸ EEL 4920 & EEL 4921C shall be taken during the student’s last two semesters prior to graduation. EEL 4921C shall be registered the semester right after taking EEL 4920, including Summer terms.
⁹ Satisfies CIVICS LEARNING (CL) requirement.
⁰ Students entering FIU in Fall 2020 or later.

*Starting in Fall 2010 Freshman and Transfer Students will have to complete 6 credit hours (2 classes) that will satisfy the Global Learning Requirement. ³ Indicates critical courses for progress.

NOTE: Any student found to be taking any course without its prerequisite or co-requisite will be dropped from the course without a refund.  Fall 2020  Rev 08/30/2020
Concentrations

### Power / Energy
- EEL 4213: Power Systems I
- EEL 4213L: Energy Conversion Laboratory
- EEL 4214: Power II
- EEL 4215: Power III
- EEL 4241: Power Electronics
- EEL 5285C: Sustainable and Renewable Energy Source and Their Utilization

### Autonomous Systems, Control & Robotics
- EEL 3657: Control Systems I
- EEL 3664: Intro to Autonomous Systems
- EEL 4421: Control Systems II
- EEL 4611L: Systems Lab
- EEL 4658: Industrial Control Systems
- EEL 4664: Sensors, Perception & Robotic Manipulation
- EGN 3311: Statics
- EGN 3321: Dynamics

### Integrated Nano-Technology
- EEE 3303: Electronics I (CpE Only)
- EEE 3303L: Electronics I Lab (CpE Only)
- EEE 3396: Intro to Solid State Devices
- EEE 4304: Electronics II
- EEE 4304L: Electronics II Lab
- EEE 4314: Integrated Circuits & Systems
- EEE 4314L: Integrated Circuits Lab
- EEE 4421C: Intro to Nanofabrication

### Communications
- EEL 3514: Communication Systems
- EEL 3514L: Communication Systems Lab
- EEL 4421: Intro to RF Circuit Design
- EEL 4461C: Antennas
- EEE 4510: Intro to DSP
- EEL 4515: Advanced Comm. Systems
- EEL 4595C: Intro to Wireless Comm. w/ USRP App.

### Bio-Engineering
- EEE 3303: Electronics I (CpE Only)
- EEE 3303L: Electronics I Lab (CpE Only)
- EEL 4140: Filter Design
- EEE 4421C: Intro to Nanofabrication
- BME 4503C: Medical Instrumentation: App & Design
- EEE 4510: Intro to Digital Signal Processing

### Computer Architecture & Microprocessor Design
- EEE 4343: Intro to Digital Electronics
- EEE 4709C: Computer Design (EE Only)
- EEE 4746: Microprocessors I
- EEE 4746L: Microprocessors I Lab
- EEE 4747: Microprocessors II (RISC)
- EEE 4747L: Microprocessors II (RISC) Lab

### Other
- EEL 4015: Electrical Design in Buildings

### Embedded System Software
- EEL 3370: C++ Prog. for Embed. Systems (EE Only)
- EEL 4730: Program. Embedded Systems (EE Only)
- EEL 4734: Embedded Operating Systems
- EEL 4740: Embedded Computing (EE Only)
- EEL 4831: Embedded GUI Programming

### Networking & Security
- TCN 4081: Telecommunication Network Security
- TCN 4211: Telecommunication Networks
- TCN 4212: Telecomm. Network Analysis & Des. and Control Standards
- EEE 4717: Intro to Security of IoT

### Cybersecurity
- EEL 4802: Intro to Digital Forensics Engineering
- EEL 4804: Intro Malware Reverse Engineering
- EEL 4806: Ethical Hacking & Countermeasures

### Digital Forensics
- EEL 4802: Intro to Digital Forensics Engineering
- EEL 4804: Intro Malware Reverse Engineering
- EEL 4806: Ethical Hacking & Countermeasures
- EEE 4750: Intro to Image & Video Forensics
- EEE 4752: Intro to Network Forensics & Incident Resp.
- EEE 4754: Intro to Mobile Forensics

### Artificial Intelligence and Big Data
- CNT 3143: IoT & Analytics w/ Cloud Services
- CNT 4145: Sensor IoT Analytics
- CNT 4147: IoT & Sensor Big Data Analytics
- CNT 4149: Sensor & IoT Data Ana. w/ Deep Learning
- CNT 4151: IoT & Sensor Data Visualization
- CNT 4153: IoT Applied Machine Learning
- CNT 4155: IoT & Sensor Programming w/ Python

### Internet of Things
- COP 4610: Operating Systems Principles
- COP 4655: Mobile Application Development
- EEE 4510: Intro to Digital Signal Processing
- EEE 4717: Intro to Security of IoT
- EEL 4740: Embedded Computing (EE Only)
- TCN 4211: Telecommunication Networks

### Data System Software
- COT 3100: Discrete Structures (EE Only)
  - (Alternative: MAD 2104 – Discrete Math (EE Only))
- COP 2210: Programming I
- COP 3337: Programming II
- COP 3530: Data Structures
- COP 4338: Systems Programming
- COP 4610: Operating Systems Principles
- COP 4655: Mobile Application Development

### Entrepreneurship
- EEL 4933: Engineering Entrepreneurship
- EEL 4062: Engineering Business Plan Development
- EEL 4063: Economic Decision-making in Engineering

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**Concentrations:**
- Student must complete at minimum 9 credits or 3 courses to satisfy an area of concentration, including any lab corequisite course as applicable
- Student must complete 2 concentrations
- Electrical Engineering student must complete minimum of 42 concentration credits which cannot be from courses found in ECE Core and Electrical Engineering Program Core
- Computer Engineering student must complete minimum of 34 concentration credits which cannot be from courses found in ECE Core and Computer Engineering Program Core

**NOTE:** Any student found to be taking any course without its prerequisite or co-requisite will be dropped from the course without a refund.

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