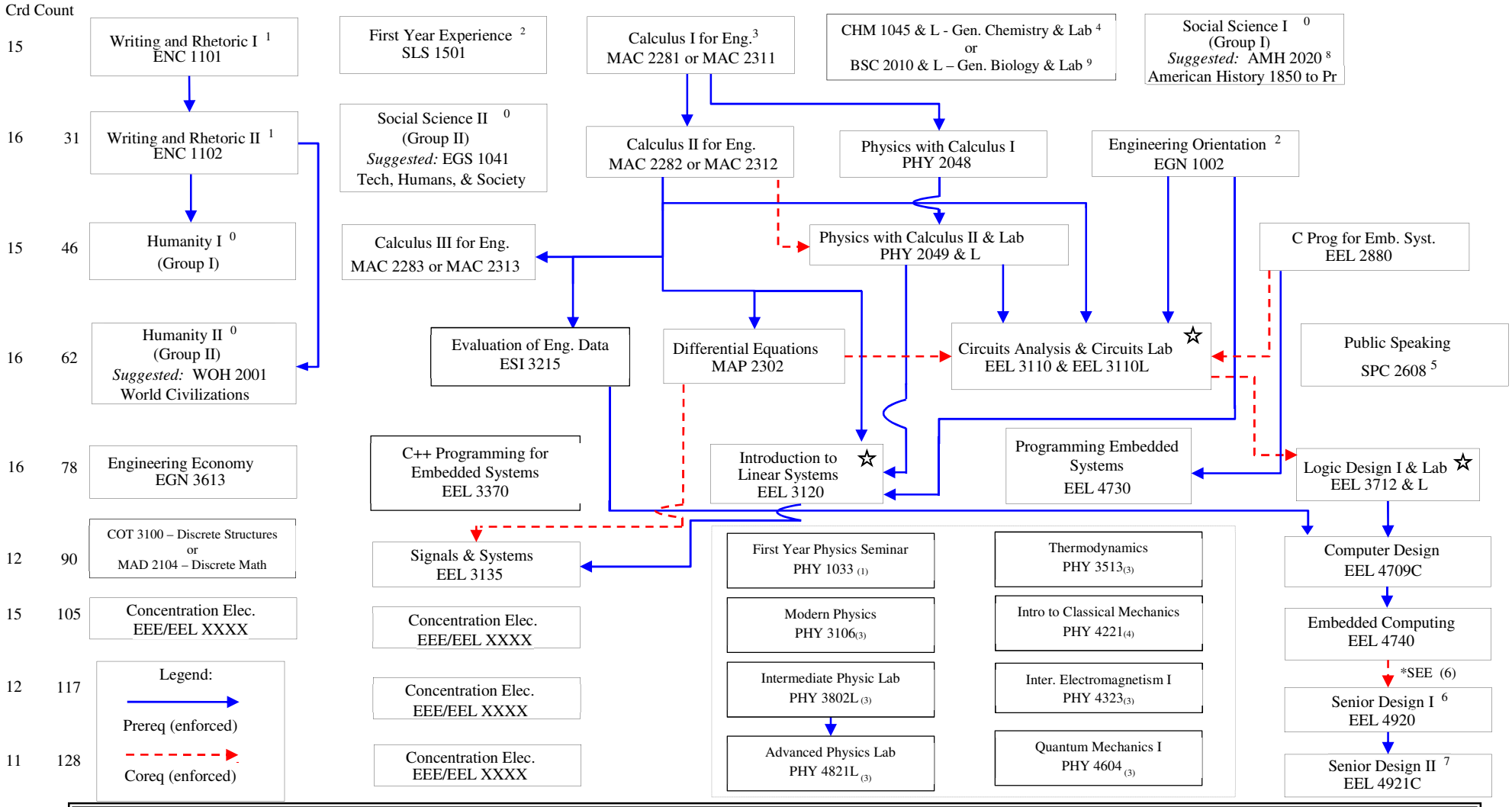
# Computer Engineering Physics Track Flowchart




**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 Physics Concentration: ____/23crd Concentration Total: ____/34crd CL: _____

[0] List of alternative courses can be found: https://acs.fiu.edu/offices-services/advising/university-core-curriculum-updated-6-17-20.pdf

[1] Students w/> 30 transfer credits may be able to substitute ENC 1101 & ENC 1102 with: 1) ENC 2304 and 2) then one of the following: ENC 3213, ENC 3249, ENC 3311 or ENC 3314

[2] Students w/> 30 transfer credits may be able to substitute SLS 1501 & EGN 1002 with an advisor approved 3-credit concentration elective

[3] Prerequisite: MAC 1105 + MAC 1147 or (MAC 1114 + MAC 1140)

[4] Prerequisite: Second year high school algebra or MAC 1105 College Algebra

[5] Students who transfer in a UCC arts (that is not Public Speaking) can replace one 3-credit concentration elective with SPC 2608 – Public Speaking.

[6] **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.**

[7] 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.

[8] Satisfies CIVICS LEARNING (CL) requirement. [9] 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**. ☆ 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 4611 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
- EEL 4709C Computer Design ***(EE Only)***
- EEL 4746 Microcomputers I
- EEL 4746L Microcomputers I Lab
- EEL 4747 Microcomputers II (RISC)
- EEL 4747L Microcomputers 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.
- TCN 4431 Principles of Network Management 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

**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.**