**Department of Software Engineering**

**BS UNDERGRADUATE CURRICULUM**

For students starting Fall 2022, i.e. 2022 v1.3, last updated Sep 8, 2022

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**Year One**
- **Software Dev I**
  - GCIS-123 (4)
- Freshman Seminar
  - SWEN-101 (1)
- **Software Dev II**
  - GCIS-124 (4)
- **Personal SE**
  - SWEN-250 (3)
- **Proj-Based Calculus I**
  - MATH-181 (4)
- **Social Perspective**
  - Discrete Math for Computing
    - MATH-190 (3)
  - Global Perspective
    - Artistic Perspective
      - UWRT-150 (3)
  - RIT 365
  - YOPS-010 (0)

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**Year Two**
- **Intro to SE**
  - SWEN-261 (3)
- **University Physics I**
  - PHYS-211 (4)
- **Communication**
  - COMM-253 (3)
- **Lab Science**
  - STAT-205 (3)
- **Artistic Perspective**
  - Artistic Perspective
    - (3)
  - Ethical Perspective
    - (3)
  - SE Co-op Seminar
    - SWEN-99 (0)

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**Year Three**
- **Engineering of Software Subsystems**
  - SWEN-262 (3)
- **Engineering of Web Based SW Systems**
  - SWEN-344 (3)
- **SW Process & Project Management**
  - SWEN-256 (3)
- **SW Design for Computing Systems**
  - SWEN-340 (3)
- **Analysis of Algorithms**
  - CSCE-261 (3)

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**Year Four**
- **HC Reqs & Design**
  - SWEN-444 (3)
- **SE Process Elective**
  - (3)
- **Engineering Secure Software**
  - SWEN-331 (3)
- **Math/Science Elective**
  - (3)

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**Year Five**
- **SW Eng. Project I**
  - SWEN-561 (3)
- **SW Design for Computing Systems**
  - SWEN-562 (3)

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**Key**

- **Course Name**
  - Software Engineering Courses
  - Computer Science Courses
  - Engineering Electives
  - Professional Elective
  - Math and Science Courses
  - General Education
  - Open Electives

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**BS/MS Course Sequence**

Tracks for BS-SE undergrads are:
- MS in SE
- MS in Computer Science
- MS in Computing Security
- MBA

Two grad courses may count toward your BS. Many CSCI and CSEC courses qualify as Engineering Electives, otherwise Open Electives are used.

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**Co-op Process**

The process for finding and registering co-op can be found here.

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**Software Design & Process Electives**

Software Engineering elective courses are designated as either “design” or “process” electives. You are required to take one of each.

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**Engineering Elective Requirement**

Generally, approved electives include:
- Software Engineering electives
- Many courses from KGCOE
- Many courses from Computer Science
- Some courses from Computing Security
- Some courses from School of Information

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**Professional Elective Requirement**

This course must be either another Engineering Elective, or certain courses from Saunders College of Business.

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**Math/Science Electives**

- Recommended courses for natural science majors.

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**Lab Science**

- Choices include BIOG-101/103, BIO-102/104, BIOL-101/103, BIOL-102/104, CHMG-141/145, CHMG-131/145, or PHYS-212. Note that PHYS-212 requires a C- or better earned in PHYS-211 or 211A.

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**General Education Framework**

Perspectives: Complete a course in each of the Social, Artistic, Ethical, and Global perspective categories. The other three perspectives are specified by required courses in the SE program.

Immersion: Select an Immersion approved in the General Education Framework. An immersion consists of three pre-defined upper level courses focusing on one topic area.

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**Wellness Requirement**

Complete two wellness courses with different course numbers. Search for courses with an activity attribute. (Not shown in flow chart.)

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**Courses with “C- or Better”**

- Calculus sequence
- Introductory programming sequence
- SWEN-262

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**Official Curriculum**

This site has course descriptions, lists of approved electives, and pre-reqs from the registrar.

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This is a **recommended** course sequence, but individual schedules will vary. **Not all pre-requisites** are shown here. Please verify pre-requisites in your planning. Please seek the guidance of your academic advisor as necessary.