ENGINEERING-GENERAL (EGG)

EGG101. Introduction to Engineering Science. 3 Credits.

This entry-level course provides students with an overview of the engineering sciences. Equal emphasis is placed on the three fields of engineering in which SUNY New Paltz offers degree programs; Electrical Engineering, Computer Engineering, and Mechanical Engineering. Each module offers hands-on learning experiences through projects.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Undergraduate

Prerequisites:

- Math Placement Level Minimum Score of 5 or MAT181 Minimum Grade of C-

May not be repeated for credit

EGG193. Engineering Selected Topic. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate

Prerequisites:

- EGG101 Minimum Grade of C-

May be repeated for credit

EGG199. Modular Course. 1-12 Credits.

May be repeated for credit

EGG250. Energy and the Environment. 3 Credits.

Energy fundamentals, fossil based (coal, oil and gas), nuclear and renewable energy sources (such as solar, wind, hydro, geothermal, biomass, tidal and ocean thermal). Heat engines, use of energy in transportation, energy conservation and effect of energy consumption in the environment (locally and globally) are studied.

Attributes:

- Liberal Arts
- GE4: Natural Science Course
- GE5: Natural Science Course
- GE3: NSCI
- Systematic Inquiry

Prerequisites:

- Math Placement Level Minimum Score of 3 or MAT120 Minimum Grade of C- or MAT 151 Minimum Grade of C- or MAT053 Minimum Grade of C- or MAT121 Minimum Grade of C-

May not be repeated for credit

EGG293. Engineering Selected Topic. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate

May be repeated for credit

EGG295. Indep Study General Engi. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate

May be repeated for credit

EGG311. Engineering Statistics. 3 Credits.

This course will provide students with an understanding of the principles of engineering data analysis using basic probability theorems and statistical methods with emphasis on their application to real-world data processing problems.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman
- Must be enrolled in the following field(s) of study (major, minor or concentration):
  - Computer Engineering (518)
  - Electrical Engineering (517)
  - Mechanical Engineering (521)

Prerequisites:

- MAT252 Minimum Grade of C-

May not be repeated for credit

EGG321. Technical Communication. 3 Credits.

Prepare proposal for Senior Design Project. Build high level statement, audience definition, product definition statement, product plan, risk assessment, and product verification and wrap-up plan. Also covers business memos, abstracts and summaries mechanical descriptions, poster sessions, business ethics, and business-oriented oral presentation. Two oral presentations are required.

Attributes:

- Liberal Arts
- Writing Intensive

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman
- Must be enrolled in the following field(s) of study (major, minor or concentration):
  - Computer Engineering (518)
  - Electrical Engineering (517)
  - Mechanical Engineering (521)

Prerequisites:

- ENG 180 Minimum Grade of C- or ENG170 Minimum Grade of C- or ENG206 Minimum Grade of C- or ENG207 Minimum Grade of C- or ENG 002 Minimum Grade of TC-

May not be repeated for credit

EGG393. Engineering Selected Topic. 3-12 Credits.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman

May be repeated for credit

EGG399. Modular Course. 1-3 Credits.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman

May be repeated for credit

EGG408. Senior Design Project I. 2 Credits.

Part 1 of the engineering capstone experience. Students produce a two-semester project plan and work in teams, with guidance from their project advisor(s), to design and implement a prototype that they will demonstrate and present at the end of the semester. Attendance at project-management lectures is required.

Attributes:

- Capstone or Creative Works
- Liberal Arts
- Writing Intensive

Restrictions:

- Must have the following level: Undergraduate
- Must be enrolled in the following class: Senior
- Must be enrolled in the following field(s) of study (major, minor or concentration):
  - Computer Engineering (518)
  - Computer Engineering AP (266)
  - Electrical Engineering (517)
  - Electrical Engineering AP (267)
  - Mechanical Engineering (521)

May not be repeated for credit

EGG409. Sr Design Project 2. 2 Credits.

Part 2 of the engineering capstone experience, which culminates in a final design. Students, with guidance from their project advisor(s), improve on the prototype produced in EGG408. At the end of the course, students demonstrate and present their final design and submit a Senior Design Project Report that describes the entire (two-semester) design process.

Attributes:

- Capstone or Creative Works
- Critical Thinking Advanced
- Information Mgmt Advanced
- Liberal Arts
- Writing Intensive

Restrictions:

- Must have the following level: Undergraduate
- Must be enrolled in the following class: Senior
- Must be enrolled in the following field(s) of study (major, minor or concentration):
  - Computer Engineering (518)
  - Electrical Engineering (517)
  - Electrical Engineering AP (267)
  - Mechanical Engineering (521)

Prerequisites:

- EGG408 Minimum Grade of C-

May not be repeated for credit

EGG441. Microelectronics Reliability. 3 Credits.

This course will provide students with the practical background of operation and degradation physics in semiconductor devices, methods for reliability characterization, and data analysis methodology for the most important reliability wearout mechanisms in microelectronic. It will cover the necessary basics in semiconductor physics, materials science, transistor operation, reliability fundamentals and the latest trend in the industry. In addition, individual and team projects will offer students working knowledge of qualifying semiconductor technologies for both FEOL (front end of line) and BEOL (back end of line) fields.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman

Prerequisites:

- EGG 340 Minimum Grade of C- or EGE320 Minimum Grade of C- or EGM322 Minimum Grade of C-

May not be repeated for credit

EGG472. Engineering Management. 3 Credits.

Prepares engineering students for a career in management. Through class discussions, group projects, various videos, and guest speakers, students find out what a managements role will entail, including ethical issues. Students learn how to go from being a practicing engineer to being and engineering manager.

Restrictions:

- Must be enrolled in the following field(s) of study (major, minor or concentration):
  - Computer Engineering (518)
  - Computer Engineering AP (266)
  - Electrical Engineering (517)
  - Electrical Engineering AP (267)
  - Mechanical Engineering (521)

Prerequisites:

- EGE200 Minimum Grade of C-
- EGE201 Minimum Grade of C-

May not be repeated for credit

EGG493. Engineering Selected Topic. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman

May be repeated for credit

EGG495. Indep Study Generl Engin. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate
- Must not be enrolled in the following class: Freshman

May be repeated for credit