

A - New Course Proposal V. 7.2022 : Entry # 3055**DEAN Decision**

Approved

Date

09/18/2023

Is this course intracollegiate or intercollegiate?

Intracollegiate

DEAN Comments

Introducing 3 new programs: Mechanical, Mechatronic and General Engineering.

SCHOOL EPC Decision

Approved

Date

10/03/2023

Begin Form**Today's Date**

09/17/2023

Your Name:

Michael Oudshoorn

Your Email:moudshoo@highpoint.edu**Are you a Department Chair?**

Yes

By checking below, I certify that my department chair has seen and approved the new course that I am proposing.

Yes

Please select the appropriate school overseeing this proposal:

Engineering

Which semester is this course to be taught for the first time?

Fall 2024

Information for the Registrar

A - New Course Proposal V. 7.2022 : Entry # 3055**Choose the department designator from the list below.**

MME

Proposed Course Number?

1005

Is this course cross listed?

No

Does this course replace a current course?

No

What is the title of the new course?

Introduction to Engineering Design

Write the catalog description of your proposed course:

Students engage in open-ended problem solving, learn and apply the engineering design process, and utilize industry standard technology and software. In Introduction to Engineering Design, students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and use an engineering notebook to document their work.

How many credit hours will this course be?

3

How will the course be graded?

Letter grade

Please select the course repeat option for this course:

Not repeatable for credit

What is the offering cycle for this course?

Fall semester

Does your course have any prerequisites?

No

Is this new course being proposed because of a new or revised major or minor proposal?

Majors:

Mechanical Engineering

Mechatronic Engineering

General Engineering

Submitted by:

Michael Oudshoorn

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Submission date:
9/17/2023

Gen Ed and Academic Programs**Is this course part of Gen Ed?**

- No

Does this course count towards a major or a minor?

Yes

Please list the Major / Minor and if it is Required or Elective

Required: Mechanical/Mechatronic/General Engineering

Is this course part of an academic program?

- This course does not fulfill academic program requirements

Does this course include any community engagement?

No

Does this course participate in the GoGlobal Program?

No

Information for Curriculum Review**Rationale and evidence for new course's consistency with departmental mission:**

This course matches and supports the departmental/program mission by providing students with the necessary background in mechanical engineering in support of the newly proposed programs in Mechanical, Mechatronic and General Engineering. To achieve ABET accreditation for these programs, students must be exposed to breadth and depth within the discipline. All courses either provide foundational content upon which the depth will be built, or provide the depth by utilizing earlier courses. The courses provide students with in-demand skills and knowledge that will prepare them for the workforce.

List all student learning outcomes for this course.

Throughout the semester students will develop an understanding of, and demonstrate their proficiency in the following concepts and principles pertaining to vector mechanics, statics.

1. Students successfully demonstrate the engineering design process in completing a design project
2. Students demonstrate teamwork skills
3. Students demonstrate written and oral communication skills
4. Students demonstrate professional responsibility through punctuality, and meeting deadlines
5. Students demonstrate time management skills in carrying out the design project
6. Students network with School of Engineering faculty and students, employers of engineers and engineering technologists, and other HPU support personnel
7. Students demonstrate basic awareness of engineering codes of ethics and impact of engineering solutions on environment

A - New Course Proposal V. 7.2022 : Entry # 3055**List any units or content areas that will be required for all sections of this course.**

- Introduction to Engineering Design
- Defining a design process
- Case study
- Problem definition: detailing customer requirements
- Problem definition: clarifying the objectives
- Problem definition: identifying constraints
- Problem definition: establishing functions
- Conceptual design: generating design alternatives
- Conceptual design: evaluating design alternatives and choosing a design
- Communicating designs graphically
- Prototyping and proofing a design
- Communicating design orally and in writing
- Mathematical modelling in design
- Engineering economics in design
- Design for production, use, and sustainability
- Design team dynamics
- Managing a design project
- Ethics in design

List any assignments, tests, or other assessments that will be required for all sections of this course.

Assignments may vary.

List any readings or other materials that will be required for all sections of this course.

Readings may vary

List any course policies that will be required for all sections of this course.

Policies may vary

If you would like to specify how requirements for contact hours must be met for all sections of this course, please indicate below. (e.g., if any experiential learning activities will replace seat time)

The course will have a minimum of 2 hours of lecture content and 2 hours of lab content.

Sample Syllabus

- [MME1005-Intro-Engineering-Design.pdf](#)