



College of Engineering

Engineering Faculty Document

No.: 157-25

April 1, 2025

**TO:** The Engineering Faculty

**FROM:** The Faculty of the Weldon School of Biomedical Engineering

**RE:** New undergraduate level course – BME 49201 Biomedical Engineering Design Part II

The Faculty of the Weldon School of Biomedical Engineering has approved the following new undergraduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**NEW COURSE: BME 49201 Biomedical Engineering Design Part II**

Offered Spring

2 total credits: lecture

Prerequisite: Undergraduate level BME 49101 (Minimum Grade of C-)

**Course Description:**

BME 49201 is the second course in a sequence of courses that prepares students for engineering practice through a major design experience, encompassing conceptualization, requirements generation, and system and detailed design. Essential design constraints will be reviewed and applied including safety, economic, and manufacturability. The course continues the design experience from BME 49101 with verification, validation, and re-design as points of emphasis. Additionally, regulatory and ethical design constraints will be discussed. This two-semester sequence (BME 49101-49201) provides real-life experience of engineering problem solving in a group setting, from identification, planning and design, and testing, culminating in the second semester in an official project presentation. In addition to hands-on design work, students will gain exposure to the phases of a project development cycle; to the written and oral communication tools and techniques necessary for team project design and for the review process; and to realistic design constraints, including regulatory constraints specific to the design of medical devices (e.g. FDA approval). This second semester focuses on refining the engineering design project and verifying and validating a prototype in a team environment.

**RATIONALE:**

BME has a current course in Indianapolis (BME 49200 BIOMEDICAL ENGINEERING DESIGN II) that is 3 credits and it is required for the continuing BME students in Indianapolis that are following the IUPUI curriculum. Therefore, it must remain available as 3 credits until all the continuing students have successfully completed this requirement. However, for new beginner BME students in Indianapolis who will be following the Purdue curriculum, the course will be 2 credits because of how we redesigned the curriculum during the Purdue-IUPUI integration process. During the redesign, we removed 1-credit worth of ethics content from the BME

49200, 3 credit version, since this ethics content will be covered elsewhere in the integrated Purdue curriculum. We are therefore requesting to create this 2-credit course so that we can include it in the catalog terms for the new incoming BME students who will be following the Purdue curriculum.

Signed by:

*Kevin John Otto*

404EEC6238DE4DD...

---

Kevin Otto, PhD

Dane A. Miller Head and Professor

Weldon School of Biomedical Engineering

Link to Curriculog entry: [BME - 49201 - | Curriculum](#)