

SBME's Design Courses

UBC's School of Biomedical Engineering offers three client-based design courses.

The information captured below outlines these courses and provides an overview of the project solicitation and selection process. Depending on the scope, client needs, and expectations, a project may be more or less suited to a particular course.

3rd Year Design

BMEG 357 is a third-year undergraduate course that builds on the biomedical engineering design process presented and explored in second year. Students will work in groups on a real client-centered design project, with the goal of creating a minimum viable product or prototype.

Capstone

Capstone (BMEG 457) is a 4th-year design project course. Student teams follow a structured design process with the goal of delivering functioning prototypes and design documentation (including a formal report). Students design a product or service of significance to solve an open-ended biomedical engineering problem.

Engineers in Scrubs

Engineers in Scrubs (EiS) is a specialization in SBME's graduate program that trains students to be leaders in medical innovation with a design process that emphasizes impactful translation and collaboration with clinical stakeholders.

COMPARISON ACROSS DESIGN COURSES

Course	Suitable projects	Student Expertise	Project Length & Student Hours	Client interaction
<u>BMEG 357</u>	Projects with some mechanical focus (for prototyping), but in conjunction with other skills (e.g., electrical, cellular, informatics)	Intermediate design project experience & beginner-intermediate prototyping experience	3 months (Jan - April) 30-48hrs/week	Students collect client questions to ask in a group setting at specific checkpoints throughout the term (~4-5 checkpoints incl. final presentation)
<u>BMEG 457</u>	Projects need to have a clear design aspect	Advanced design project experience & Intermediate- advanced prototyping experience	8 Months (Sept - April) 40-50hrs/week	Students meet with clients on a regular (recommended bi-weekly) basis to scope the project and setup needs and specification. Continuous client feedback on design progress
<u>Engineers in Scrubs</u>	Any biomedical / clinical problem for which a potential engineering solution would have a large impact. Program will provide support for continued development beyond the end of the course	Cohort represents a cross-section of SBME graduate students, which include life sciences and engineering, so physical prototyping experience varies. Students encouraged to form well-rounded teams with a variety of complementary skills	8 Months (Sept - April)	<u>Two clinical engagement sessions</u> (MedTech CAFÉs) in the first term. Session 1: multiple clinicians pitch their problems, students perform research on each problem and present their findings in session two If a project is selected, the team is expected to touch base with the clinical partner on a <u>weekly basis</u> from Jan-April. If a clinician is too busy to engage deeply, they are encouraged to assign a designate