TESTIMONIALS

“Taking the extra time to get an M.Eng. was one of the best decisions I’ve made. I have plenty of options with regards to career paths and much more knowledge that makes me valuable to employers.”

Vincent Zaballa – Master of Engineering Student and Covidien, Ltd. Intern

“We encourage participation in the Texas A&M Biomedical M.Eng. program; companies like Exothermix need graduates that are ‘plug and play’ ready for the development and production of next-generation medical devices.”

Adam Laubach – CEO, Exothermix

Students in the M.Eng. program have the opportunity to further their engineering education with the aim of entering the medical device industry; advance their careers in the medical device industry; change their careers to enter the medical device industry; or simply refresh and enhance their technical and management skills with a focus on the medical device industry.

Through the program, students are enabled with the skills to enter the medical device industry and solve critical engineering challenges/business interface challenges in healthcare. They collaborate with industry and hospital personnel to identify unmet needs, engineer technologies that address these needs and develop paths-to-market for these technologies.

Real-world, experiential learning is a major component of the M.Eng. program and is realized through internships as part of the formal academic curriculum. Action learning is enabled via close collaborations and project immersion opportunities through internship programs with medical device companies. Students are also trained in the front-end of product innovation through clinical, immersion-based courses and projects.

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Although primarily coursework based, the Master of Engineering includes a required immersion experience that can take place in one of three ways. Students prepare for these experiences through coursework completion and apply for positions in the track(s) of their choice during the spring semester. The immersion experience must be a minimum of three months and is traditionally completed in the summer semester, although longer-term experiences are also available.

**OUR CURRICULUM**

The Master of Engineering (M.Eng.) program in biomedical engineering offers a flexible biomimetic-based curriculum that equips students for success by allowing them to tailor their training toward different aspects of the biomedical product life cycle. The biomedical M.Eng. program curriculum is organized to allow interested students to concurrently pursue certification in various topics, such as the Certificate in Quality Engineering for Regulated Medical Technologies, the Project Management Certificate or the Certificate in Entrepreneurship.

**DUAL DEGREE PROGRAM**

Students in the M.Eng. program may also pursue a dual degree that includes a Master of Business Administration, through partnership with Mays Business School at Texas A&M.

**CREATING INDUSTRY LEADERS**

The M.Eng. curriculum is designed to create "I-shaped engineers"—engineers with lateral skills as well as deep engineering domain skills—through a combination of coursework and a comprehensive, immersive project/internship experience in industry or in the clinical setting. Graduates of the program are ready to contribute to the commercial success of a company and pursue management-level leadership roles.

Applicants are not required to have worked full-time industry positions prior to applying to this program, but it is expected that applicants have multiple semesters of industry engagement, including internships, co-ops or job shadowing to improve their chances of admission. The program begins with a 12-month MBA program, after which students transition directly to the M.Eng. portion of the degree. Scholarships are available to all admitted students during the MBA portion of the degree. While in the M.Eng. program, students are welcome to apply for teaching assistant positions that may be available on campus.

To apply, students submit applications to both the M.Eng. and MBA programs. Supporting documents are provided to the biomedical engineering department, which then shares the materials with the MBA Admissions Office. An application fee waiver to the MBA program is available upon request. All application materials are due no later than Jan. 15.

*All M.Eng. students are required to take the course on “Risk Based Design & Development of Medical Devices” offered every fall semester.*

Three tracks of study are offered:

**Track A – Industry Immersion**

Under the guidance and direction of faculty advisors, students will secure a professional or approved industry internship. The industry internship should involve deep immersion in the process of product development, and the student should be able to articulate this experience in a final report submitted to the M.Eng. program director. In addition, the mentor from the company is required to provide an independent evaluation of the student to the M.Eng. program director at the end of the internship experience.

**Track B – Translational Immersion**

This track is designed for students interested in productization and testing of early stage medical technologies to establish the technological feasibility prior to startup venture formation. Students work on developing product prototypes and test beds for new medical or innovative ideas and patents coming out of Texas A&M Engineering research labs, and provides the students with a real-world experience in developing the technical and commercialization pathways for new medical devices and products, paying the way for the formation of new startup ventures. The student will submit an innovation portfolio including a comprehensive product design, an algorithm or prototype, test bed development and test results, and/or technology commercialization case study.

**Track C – Clinical Immersion**

Students in this track will be trained in methods used to discover clinical problems, identify unmet needs and engage in design, development and verification testing of medical devices. Although participating in immersion experiences with the program’s established clinical partners (Texas Children’s Hospital, Baylor Scott & White, Texas A&M Health Science Center, Houston Methodist), students will apply several design and invention skills toward a provisional patent application while following FDA quality systems regulations and compile a design history file for each medical device innovation.