Master of Engineering

M.ENG BME

Biomedical Engineering

Department of

BIOENGINEERING

Clemson® University

The Master of Engineering (M.Eng.) in Biomedical Engineering (BME) degree program provides an in-depth advanced engineering education to students who have completed a bachelor's degree in engineering or an applied science and desire to embrace a career in the medical device industry.

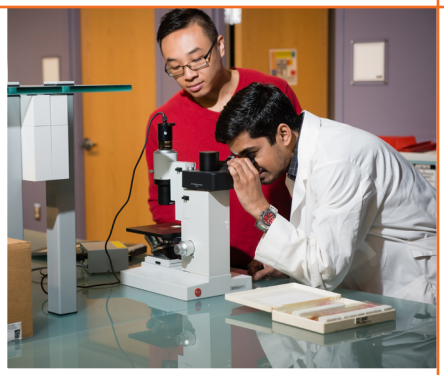
The M.Eng. in BME provides an intellectually rigorous professional graduate education that emphasizes biomedical engineering design and clinical application to better train a workforce to sustain a growing medical technology industry in South Carolina and in the United States.

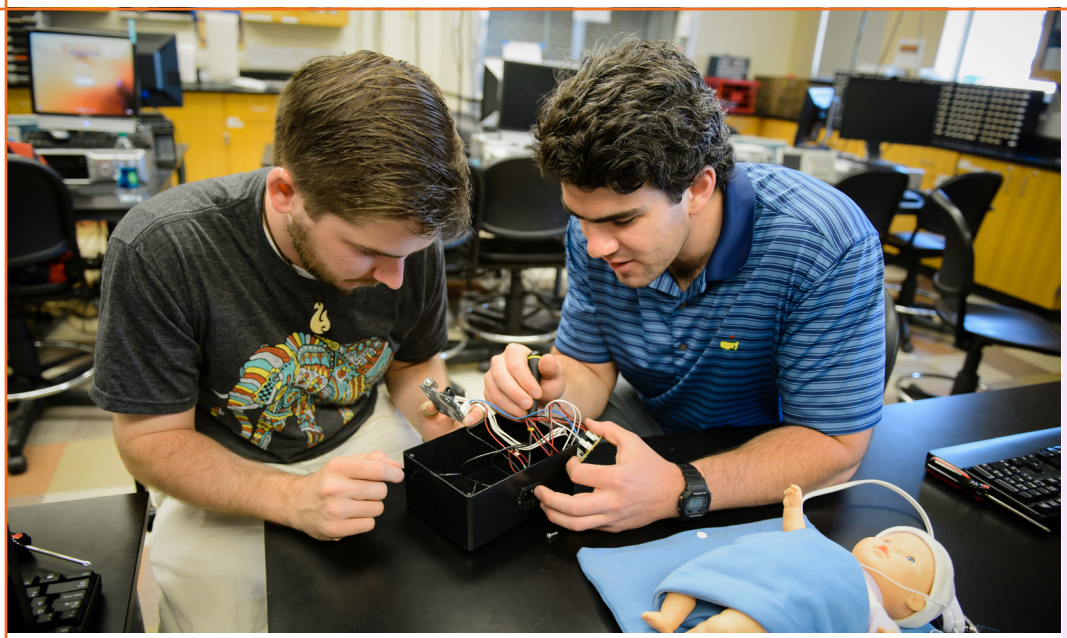
Clemson's M.Eng. in Biomedical Engineering is an intensive and encompassing, team-taught curriculum focused on medical device development and commercialization. Program instructors and mentors have extensive medical device industry and entrepreneurial experience providing students with first-hand, real-world knowledge.

Students learn current industry best practices covering topics that span the entire medical device product lifecycle from design conceptualization to postmarket activities.

Students apply their knowledge towards developing and testing innovative medical devices, designing animal studies and clinical trials, drafting business plans, creating regulatory documentation and assembling FDA premarket submissions.

The program also offers additional coursework in Quality Science, Medical Device Design for Reprocessing, and Technology Entrepreneurship.





ADMISSION CRITERIA

Must hold an accredited engineering or applied science degree (candidates with other educational and professional backgrounds will be considered on an individual basis).

- A minimum undergraduate grade point average (GPA) of 3.0 is required for admission.
- A mimimum TOEFL score of 100 is required for international students.
- Individuals may request a waiver of some of the above requirements for admission to the program if they provide sufficient evidence to the M.Eng. program director that they have had sufficient related experience to warrant a waiver. It will be up to the program to accept or decline the request.

"This program sets the stage for M.Eng. students to have an immediate and positive impact within the Med Device Industry, with extensive exposure to medical device regulation, design and development geared towards manufacturability, and most importantly using an experienced network of clinical and industry mentors that drives innovation!"

Chadd Clark, M.Eng. '16
Clemson University
Chief Operating Officer
Cycle Clarity

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CURRICULUM

The M.Eng. curriculum provides skills and expertise that enhance the individual's ability to contribute to the technical workforce. The degree will provide students an opportunity to continue their education and professional development in the context of an advanced degree. The M.Eng. also serves the practicing engineer to further his/her career in the context of an application of engineering knowledge, as opposed to a master's of science in a research context.

The minimum requirement for this degree is one year of full-time graduate study, or its equivalent. Eligibility for graduation requires a minimum of thirty (30) graduate credits from a mandatory core and technical elective courses. The M.Eng. is not a research-based degree. A student who has previous graduate work at another institution that has not been used towards a degree may petition the Graduate Committee to transfer up to nine (9) semester credit hours of relevant course work with grades of 'B' or better.

CORE CREDITS

- BIOE8140: Medical Device Commercialization (3 Credits)
- BIOE8600: Biomedical engineering device design innovation (3 Credits)
- BIOE8610: Biomedical engineering product translation (3 Credits)
- BIOE8620: Pre-clinical assessment and regulatory affairs for medical devices (3 credits)
- BIOE8630: Clinical affairs for medical devices (3 Credits)

INTERNSHIP (RECOMMENDED)

- Industrial or clinical internship: 1-6 credits (45 hours = 1 credit)

ELECTIVE COURSES EXAMPLES

- Quality Science Certificate coursework
- GreenMD Certificate coursework
- Technology Entrepreneurship Certificate coursework
- Orthopaedic Engineering
- Cardiovascular Engineering
- Biomaterials
- Medical Imaging
- Computational Modeling

M.ENG BME OVERVIEW

INDUSTRY FOCUSED 1 YEAR MASTER'S PROGRAM:

- 30 hours total. Non-Thesis.
- Supports medical device economy through the development of skilled and innovative personnel.
- Develops skills and expertise to enhance one's ability to contribute to the technical workforce.

EMPHASIS ON:

- Industry
- Entrepreneurship
- Clinical application
- Economic development
- Regulatory and Quality Science

OPPORTUNITIES:

- Extensive product development through Innovation Design Program.
- Earn certifications through electives of choice.
- Connect with MedTech industry professionals.
- Take advantage of cutting edge facilities for technology development.
- Be involved in shaping the biomedical workforce.
- Engage in professional and business development activities.

AT CLEMSON UNIVERSITY:
Department of Bioengineering
Clemson University
301 Rhodes Research Center
Clemson, SC 29634-0905

AT MUSC:
Clemson-MUSC Joint Bioengineering Program
Medical University of South Carolina
68 President Street - BE 101D - MSC 501
Charleston, SC 29425

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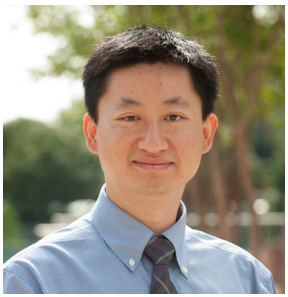

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"Overall, through this program I developed a holistic understanding of the design and development process from ideation to market launch. This complete perspective allowed me to present myself as the ideal candidate for the various engineering roles that were available in the current market space following graduation from the Master's of Engineering program. Furthermore, the skills and experiences gained from completing the M.Eng program have proven to be imperative for successfully fulfilling my current role as a Biologics Product Development Engineer."

ANELA HOLDAWAY, M.Eng. 2018
Senior Product Development Engineer

Past graduates have been placed in a variety of positions including product development engineering, marketing/product management, manufacturing engineering, quality, operations, clinical and regulatory affairs at startup and multinational companies including **Medtronic, Baxter, Becton Dickenson, Arthrex, Depuy Synthes, Wright Medical, Stryker and Zimmer Biomet**.

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