# Certificate|Close-Modify for request 12939

## Info

**Request:** Cell Engineering & Regenerative Medicine Certificate Changes
**Description of request:** Change in title and expansion of the course options to reflect expanded offerings in the discipline area.
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**Form version:** 2

## Responses

**Current Certificate Name** Cell Engineering and Regenerative Medicine
**Effective Term** Spring
**Effective Year** 2019
**Requested Action** Other (selecting this option will open additional form fields below)
**Change Certificate Name?** Yes
**Proposed Certificate Name** Cell and Tissue Science and Engineering
**Change Certificate Name on Transcript?** Yes
**Current Transcript Name** Cell Eng / Regen Med
**Proposed Transcript Name (21 char. max)** Cell/Tissue Sci/Eng
**Change Credit Hours?** No
**Current Credit Hours** 9
**Proposed Credit Hours** 9
**Change Certificate Description?** Yes
**Current Certificate Description** The Graduate Certificate in Cell Engineering and Regenerative Medicine will provide students
with a solid foundation in this field of research by studying aspects of CE/RM from both a fundamental and practical/applied standpoint. The certificate will consist of three courses, each covering complimentary aspects of cell engineering and regenerative medicine.
**Proposed Certificate Description (50 word max)** This Graduate Certificate will provide students with exposure to and a strong foundation in scientific and technological aspects of Cell and Tissue Engineering.
**Change Certificate Prerequisites?** No
**Current Prerequisites** Applicants to a graduate certificate must have an earned bachelor's degree from a regionally accredited US institution, or equivalent. Additionally, requirements for admission to this specific certificate include current enrollment in a graduate degree program within the college of engineering.
**Proposed Prerequisites** No changes
**Change Certificate Requirements?** Yes
**Current Requirements** Required courses (6 credits):
BME 6330: Cell and Tissue Engineering (3 Credits): Letter graded
BME 6324: Stem Cell Engineering (3 Credits): Letter graded
Elective courses (3 credits):
BME 6221: (*Taught by Chemical Eng.): Biomolecular Cell Mechanics (3 Credits): Letter graded
BME 6164: Magnetic Biomaterials (3 Credits): Letter graded

**Proposed Requirements** Core courses (pick 6 credits from list)
BME 6330: Cell and Tissue Engineering (3 Credits): Letter graded
BME 6324: Stem Cell Engineering (3 Credits): Letter graded
BME 5401: Biomedical Engineering & Physiology I (3 Credits): Letter graded
EMA 6580: Science of Biomaterials (3 Credits): Letter graded
EMA 6583: The Science of Cell Material Interactions (3 Credits): Letter graded

Electives (3 credits)

Take a course from the elective list (which were not taken as a core course)
BME 6938: Special Topics in Biomedical Engineering (Biomaterial Immunomodulation) (3 Credits)
BME 5580: Introduction to Microfluidics and BioMEMS (3 Credits)

BME 6330: Tissue Engineering (3 Credits)
EMA 6581: Polymeric Biomaterials (3 Credits)
BME 6221: Biomolecular Cell Mechanics (3 Credits)
BME 6164: Magnetic Biomaterials (3 Credits):
EMA 6938: Special Topics in Materials Science and Engineering (Biological Material Science) (3 Credits)

**Impact on Program** No impact. This changes gives student a wider range of choices of courses and will help them complete the certificate in a shorter time.
**Rationale for Proposed Change(s)** Previous courses were narrowly focused in the Biomedical Engineering and Chemical Engineering departments. As the certificate attracts students from different engineering departments with broad research interests in cell and tissue science and engineering, this is an attempt to expand the available course offerings.
**Assessment Data Review** A review of program goal 1 indicates little growth in the certificate program and expanding to attract students from other departments would help.
**Academic Assessment Plan Changes** No changes are anticipated in the assessment plan.

Cell Engineering and Regenerative Medicine Certificate Curriculum Changes

| **Current Requirements** | **Proposed Requirements** |
|---|---|
| | |
| **Core Courses (6 credits)** | **Core Courses (pick 6 credits from list)** |
| BME 6330: Cell and Tissue Engineering (3 credits) | BME 6330: Cell and Tissue Engineering (3 credits) |
| BME 6324: Stem Cell Engineering (3 credits) | BME 6324: Stem Cell Engineering (3 credits) |
| | BME 5401: Biomedical Engineering and Physiology I (3 credits) |
| | EMA 6580: Science of Biomaterials (3 credits) |
| | EMA 6583: The Science of Cell Material Interactions (3 credits) |
| | |
| **Electives (3 credits)** | **Electives (3 credits) Take a course from the elective list (which were not taken as a core course)** |
| BME 6221: Biomolecular Cell Mechanics (3 credits) | BME 6938: Special Topics in Biomedical Engineering (Biomaterial Immunomodulation) (3 credits) |
| BME 6164: Magnetic Biomaterials (3 credits) | BME 5580: Introduction to Microfluidics and BioMEMS (3 credits) |
| | BME 6330 Tissue Engineering (3 credits) |
| | EMA 6581: Polymeric Biomaterials (3 credits) |
| | BME 6221: Biomolecular Cell Mechanics (3 credits) |
| | BME 6164: Magnetic Biomaterials (3 credits) |
| | EMA 6938: Special Topics in Materials Science and Engineering (Biological Material Science) (3 credits) |