NOTE: Changes to programs may require course changes, which must be processed electronically. Any questions should be directed to Associate Provost David Reinhold at 7-4564 or david.reinhold@wmich.edu

DEPARTMENT: ChP
PROPOSED EFFECTIVE FALL YEAR: 2019

PROPOSED IMPROVEMENTS: Academic Program Proposed Improvements
☐ New degree*
☐ New major*
☐ New curriculum*
☐ New concentration*
☐ New certificate
☐ Revised major
☐ Revised minor
☐ Admission requirements
☐ Graduation requirements
☐ Deletion (required by others)
☐ Deletion (not required by others)
☐ Change in Title
☐ Transfer
☐ Other (explain**)

Title of degree, curriculum, major, minor, concentration, or certificate: BS in Chemical Engineering (CHGJ)

Chair, Department Curriculum Committee: [Signature] Date 9/26/18

CHECKLIST FOR DEPARTMENT CHAIRS/DIRECTORS
☐ For new programs and other changes that have resource implications, the dean has been consulted.
☐ When appropriate, letters of support from department faculty are attached.
☐ When appropriate, letters of support from other departments in the same college are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed by HIGE for possible implications for international student enrollment.
☐ The proposal is consistent with the departmental assessment plan, and identifies measurable learning outcomes for assessment.
☐ Detailed resource plan is attached where appropriate.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair/Director: [Signature] Date 9/26/18

CHECKLIST FOR COLLEGE CURRICULUM COMMITTEE
☐ The academic quality of the proposal and the faculty involved has been reviewed.
☐ Detailed resource plan is attached where appropriate.
☐ Consistency between the proposal and the relevant catalog language has been confirmed.
☐ The proposal has been reviewed for effect on students transferring from Michigan community colleges. Detailed information on transfer articulation must be included with undergraduate proposals.
☐ Consistency between the proposal and the College and department assessment plans has been confirmed.
☐ Consistency between the proposal and the College and department strategic plans has been confirmed.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair, College Curriculum Committee: [Signature] Date

Revised March 2018. All previous forms are obsolete and should not be used.
CHECKLIST FOR COLLEGE DEANS

☐ For new programs and proposed program deletions, the provost has been consulted.
☐ For new programs, letter of support from University Libraries Dean indicating library resource requirements have been met.
☐ When appropriate, letters of support from other college faculty and/or chairs are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed for implications for accreditation, certification, or licensure.
☐ Detailed resource plan is attached where appropriate.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Dean: __________________________ Date: __________________________

FOR PROPOSALS REQUIRING REVIEW BY:
GSC/USC; EPGC, GRADUATE COLLEGE, and/or FACULTY SENATE EXECUTIVE BOARD

☐ Return to Dean
☐ Forward to: Curriculum Manager: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Chair, GSC/USC: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Chair, EPGC: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Graduate College Dean: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Faculty Senate President: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Provost: __________________________ Date: __________________________

Revised March 2018. All previous forms are obsolete and should not be used.
1. Explain briefly and clearly the proposed improvement:

Add CHEG 5100: Medical and Biomolecular Concepts as an elective course in the Health Sciences Emphasis Area of the chemical engineering program

2. Rationale. Give your reason(s) for the proposed improvement.

As this course was previously offered as CHEG 5950 to gauge the interest of the students and reflect new faculty expertise, it was allowed for Health Sciences area of emphasis, we are regularizing the same. Undergraduates would be able to also take chemical engineering classes from a broader range of areas in chemical engineering and training from faculty who are specialized in those areas and prepare them for further studies in the medical field.

3. Effect on other colleges, departments, or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

NONE

4. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

NONE

5. Alignment with college's and department's strategic plan, mission, and vision.

NA

6. Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time.

This course is available for graduate and undergraduate students. It is expected to have 6-8 undergraduate students to opt for this elective course and 8-10 graduate students.

7. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

NONE

8. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. If proposing a new program, include a letter and/or email of support from the university libraries affirming that the library resource issues have been reviewed. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

NONE

9. List the learning outcomes for the revised or proposed major, minor, or concentration. The department will use these outcomes for future assessments of the program.

No change as elective courses do not change the assessment outcomes.

10. Describe how this change is a response to assessment outcomes that are part of a department or college assessment plan or informal assessment activities.

NOT APPLICABLE

11. (Undergraduate proposals only) Describe in detail how this change affects transfer articulation for Michigan community colleges. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.

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12. Please offer both "Current Catalog Language" and "Proposed Catalog Language" if there is to be a change in the catalog description for a given program. For the "current" language, please copy and paste relevant language from the most current catalog and for the "proposed" language, please share the exact proposed new catalog language. As possible, bold or otherwise note the key changes in the new proposed catalog language.

Current catalog for CHEG 5100:

**CHEG 5100 - Medical and Biomolecular Engineering Concepts**

A course focused on molecular biotechnology, bioprocessing, and pharmacology concepts related to engineering. Topics may include but are not limited to molecular biology and biochemical techniques, PCR and primer design, chromatography, gel electrophoresis and Western blotting, mass spectrometry, advanced bioprocessing, pharmacokinetics, and pharmacodynamics.

Prerequisites & Corequisites: Prerequisites: BIOS 1610, CHEM 3750, and MATH 2720, or by instructor approval.

Credits: 3 hours

Notes: Open to upperclass and graduate students. Lecture Hours - Laboratory Hours: (3 - 0)

**Emphasis in Life Sciences (17 hours minimum)**

Including at least one 3000-level course (not including CHP 3100):

- BIOS 1620 - Ecology and Evolution Credits: 4 hours
- BIOS 2110 - Human Anatomy Credits: 4 hours
- BIOS 2320 - Microbiology and Infectious Diseases Credits: 4 hours
- BIOS 2400 - Human Physiology Credits: 4 hours
- BIOS 2500 - Genetics Credits: 4 hours
- BIOS 3500 - Human Physiology for Majors Credits: 5 hours
- BIOS 5310 - Biology of Aging Credits: 3 hours
- BIOS 5610 - Pharmacology Credits: 3 hours
- BIOS 5970 - Topics in Biological Sciences Credits: 3 to 4 hours
- CHEG 5950 - Topics in Chemical Engineering Credits: 1 to 3 hours
- CHEM 3550 - Introductory Biochemistry Credits: 3 hours
- CHP 3100 - Work Experience/Co-op Credits: 1 hour

**ADD: CHEG 5100: Medical and Biomolecular Engineering Concepts. Credits: 3 hours**

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