

**Chemical and Biological Engineering
Summary of Actions
2020 - 2021**

Concern	Recommendation	Action	Follow-up
A new major in Biomedical Engineering was approved by Montana University System Board of Regents and faculty are concerned about confusion between the BS in Biological Engineering and the new Major	Provide clarity to advisors and faculty about the differences in the between the academic preparation as well as typical careers for graduates in each respective major	A document that provides clear and common language that can be used by both faculty and departmental advisors is being generated by the program coordinator for the new major and the ChBE department head.	Check in with advisors to ensure that they are aware of and using the materials. Gather informal data from students in both majors to see if they are cognizant of the differences
A non-tenure track faculty member with significant industry experience has retired (a lack of industry experience had been identified as a concern by our DAC prior to his hire)	Replace the NTT faculty member with an individual who has industry experience through a search.	A search for a replacement faculty member has been initiated after approval from the Provost's Office	Review applicant pool for industrial experience and hire most qualified candidate.
We began allowing students to take ECHM/EBIO 412 before taking ECHM/EBIO 411.in 2017. Faculty were concerned whether this change in the sequence was working and wanted to revisit the matter	The content of both courses was reviewed, and the faculty member instructing 412 felt that the decoupling of the economic analysis from the design process was working. Teams are reformed in 411 so there was not a noticeable impact within that course	No action was taken other than review of course content and discussion	No specific follow-up is need at this time, although we will continue monitoring the numbers of students taking the capstone series of courses out of sequence
Faculty were concerned that the EGEN 325 elective on engineering economics (recommended by the DAC) was too similar to content of ECHM/EBIO 412	412 instructors to review content of both EGEN 325 and 412 to see if the overlap is significant or determine if differences between how material is taught/used is a hinderance to students in 412	The 412-instructor reported that students found EGEN 325 material helpful even when some analyses were done differently. No action recommended	Because EGEN 325 is a popular elective we will continue to monitor student performance in 412

The rubric of EBIO 461- Principles of Biomedical Engineering be changed to EBME due to the new major. Also, to better align with 400 level courses taught within a major consider a name change	Revisit name change at fall retreat and proceed with both rubric and name change in fall with the Provost's office	File paperwork for rubric and name change with the Provost's office and make appropriate catalog updates	Ensure that changes are present when the next catalog is published in spring 2022.
Newly proposed EBME courses now exist due to the new major and are not part of the biomedical engineering minor	Add EBME 301 – Engineering analysis of Physiological Systems and EBME 410 – Bioelectronics and Bioinstrumentation to the minor list of course options	The biomedical engineering minor coordinator will update the potential electives adding the new EBME courses in the appropriate focus areas	Track student enrollment in these courses specifically amongst the EBME minor cohort
Students are required to take the FE exam but many are not reviewing prior to the test resulting in a declining pass rate. Our pass rate was below the national average in 2020.	Faculty wanted to investigate if there still value in requiring our graduates to take the FE exam and use results as an assessment tool.	Pandemic could have negatively impacted our pass rate. Faculty determined there is still value in students having the EIT credential when they graduate	Continue to monitor both FE Exam pass rate and the extent of student preparation. Promote the FE exam study modules that are available.
Our rubric for outcome 7 looks for an assessment of “students recognizing the need for lifelong learning” and this is difficult to assess	Several alternatives were discussed. (1) change the assessment rubric to be more closely tied to the verbiage in outcome 7, or (2) utilize a different assignment or metric (e.g. alumni survey)	The verbiage of the assessment rubric will be altered to more closely align with Outcome 7 rather than the outdated Outcome “1”	This will be reassessed when outcome 7 is evaluated again in 2023

Much of the 2021 academic year was dominated by adaptations made by both students and faculty as they navigated operations under a variety of COVID related restrictions. Although most of our classes were offered in a face-to-face format, faculty prepared supplementary remote materials for students in quarantine or isolation. Course assessment methods were adapted to be more numerous, but lower value. In many blended courses, these assessments could not be in-person and there were concerns about academic integrity pertaining to individual assessments. At this time the university is planning for normal operations for AY2022.