

Biomedical Engineering Graduate Program Assessment Plan

OUTCOMES ASSESSMENT

All BME students will be evaluated over the five Program Outcomes via a program rubric. Four instruments will be used in outcome assessment including Ph.D. Dissertation Defense, Ph.D. Comprehensive Exam (proposal defense), M.S. Thesis Defense, and M.S. Non-Thesis Project. The Major Professor, in conjunction with each student's graduate committee will score the rubric and return it to the BME Program Coordinator.

STUDENT SATISFACTION SURVEY

All BME students will complete a satisfaction survey upon completion of their degree plan. The Program Coordinator will conduct the survey.

BMEAC PROGRAM REVIEW

The Biomedical Engineering Advisory Council (BMEAC) will review the outcomes rubrics and Student Satisfaction Surveys annually (at the end of the academic year) and use the review process to guide program modifications, if necessary. The assessment data will also be used for general program planning and utilized in the annual budget hearing requests.

Biomedical Engineering Graduate Program Student Outcomes

At completion of the degree program, Biomedical Engineering Graduate Students will have:

1. knowledge of Biomedical Engineering fundamentals appropriate for the discipline and in-depth knowledge of their chosen specialization;
2. an ability to conduct original, independent research and the ability to analyze, interpret, and evaluate scientific and engineering data;
3. an ability to explore and evaluate scientific and technical literature;
4. an ability to communicate technical information effectively (both written and oral);
5. an ability to conduct themselves in a professional and ethical manner consistent with the graduate level.

BME Graduate Program Assessment Rubric*

Student Name: _____ Date: _____

Check One: _____ PhD Defense _____ PhD Comp. Exam _____ MS Thesis Defense _____ MS Non-Thesis Project

Outcome	Mastery (5)	Proficient (3)	Unacceptable (1)	Rating
Knowledge of BME fundamentals appropriate for the discipline and in-depth knowledge of their chosen specialization	Demonstrates mastery BME fundamentals and mastery of technical knowledge in specialization. Uses appropriate technical terminology in precise and effective manner.	Demonstrates an acceptable understanding of BME fundamentals and acceptable technical knowledge in specialization. Uses technical terminology appropriately.	Demonstrates only rudimentary understanding of BME fundamentals and technical knowledge in specialization. Usage of technical terminology is inaccurate or absent.	
Conduct original, independent research and analyze, interpret, and evaluate scientific and engineering data	Demonstrated original thinking; applied scientific theory; research program planned and executed in excellent fashion; demonstrated ability to analyze, synthesize, and evaluate data.	Demonstrated some level of original thinking; demonstrated some application of scientific theory; research program adequately planned and executed; demonstrated some ability to analyze, synthesize, and evaluate data.	Limited original thinking; limited use of scientific theory; research program poorly planned and executed; major errors observed in ability to analyze, synthesize, and evaluate data.	
Explore and evaluate scientific and technical literature	Extensive and critical review of relevant literature that informs the research question and methodology. Manages citations in professional and orderly manner	Adequately reviews most relevant literature that somewhat informs the research question and methodology. Manages citations in adequate manner.	Poorly reviews the literature and provides limited basis for the research question or research methodology. Poorly manages citations.	
Communicate technical information effectively (both written and oral)	Document is very well written and properly organized. Presentation is well organized and well delivered. Responds to questions in professional and technical manner that leads to additional scientific discussion.	Organization and writing quality is adequate. Presentation is generally well organized and delivered adequately. Responds to questions in professional manner although responses are not well thought out.	Organization and writing quality is poor. Presentation is unorganized or delivered poorly. Responds to questions unprofessionally or without proper consideration.	
Conduct themselves in a professional and ethical manner consistent with the graduate level	Acts professionally and treats others with respect. Conducts research in responsible and ethical manner.	Generally acts in professional manner and is respectful to others. Conducts research in responsible and ethical manner.	Acts in unprofessional manner with limited respect for others. Research is not conducted in responsible or ethical manner.	

Total Rubric Score _____

Comments:

Major Professor: _____

Committee Members: _____

Print Name

Signature

**This form is to be completed by the Major Professor, in collaboration with the Graduate Committee, and returned to the Biomedical Engineering Graduate Program Coordinator. This form is to be used for program assessment only.*

BME Graduate Program Student Satisfaction Survey

Congratulations on your upcoming graduation from the South Dakota School of Mines and Technology. All BME graduate students are expected to complete this survey as part of completing their degree. Your honest and thoughtful responses to this survey will help the BME program evaluate and improve our program.

	Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable
COURSES					
The faculty teaching courses in my program were effective teachers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Courses in my major were academically challenging.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The intellectual caliber of students in my graduate program was high.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GRADUATE ADVISOR					
The information provided to me by my advisor regarding my course of study was accurate and helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My advisor gave helpful feedback on my thesis, dissertation, project, or creative activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My advisor provided adequate opportunities for research or creative activity outside of my thesis or major project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GRADUATE OFFICE SERVICES AND PERSONNEL					
Requests for information from the Graduate School Office were handled in a timely manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Strongly
Disagree**

Disagree

Agree

**Strongly
Agree**

**Not
Applicable**

Graduate School staff members were willing to help me resolve problems.

The Graduate School staff was effective in explaining procedures for me to follow to complete requirements for my degree.

**LIBRARY AND TECHNOLOGY
SERVICES**

Library resources were adequate to support my class and research needs.

Computer technology and wireless access was adequate for my class and research needs.