



**Biomedical Engineering Directed Research Guidelines**  
BIOMEDE 590

(1) Project Selection: Whereas a student goes to a particular faculty member presumably to learn more about the faculty member's area of research interest, generally it will be the faculty member who presents the student with a choice of possible research projects rather than the other way around. In certain cases the student may suggest possible projects that may be acceptable to the project director.

Projects may consist of one or more of the following: (i) an in-depth library search of an area, (ii) the design and/or construction of hardware, (iii) the collection and/or analysis of experimental data, (iv) the generation of computer software.

The project should require some creativity and/or independent work by the student. The faculty member should not expect the student to be a free helper and consequently the project should not require excessive menial work.

(2) Academic Credit: Once a project has been agreed upon, the faculty member and student should establish the credit to be received. Typically, three to four hours per week of actual "work" time is expected for each credit hour given in a normal term. In a half-term, this should be doubled. The "work" time should include the library-search time, the laboratory time, and the final report writing time.

Typically, a directed research project is for two (2) to four (4) credit hours per term. Students can count up to 6 letter-graded credits of BIOMEDE 590 toward the M.S. degree. Students who count 4 or more credits, either in a single or multiple terms, are required to complete a Master's Thesis and defense. Ph.D. students can also count the Master's Thesis and defense as the BME Qualifying Exam. All directed research credit is to be granted under BIOMEDE 590.

(3) Final Report: A final report must be written by the student to complete the project. The student's report should be a minimum of two typewritten pages explaining the project and what was accomplished. All graphical data, circuit diagrams, final software, etc., and a list of references should be included with the report. This report will become a part of the student's file. In addition a third page, which includes comments on the report, will be added by the project director.

The standard report form in Appendix A is to be used to provide uniformity.

(4) Course Grade: BIOMEDE 590 is to be taken for letter grade. The grade is to be based on the student's diligence in preparing for and performing the research project, as well as on the final written report. It is suggested that students discuss expectations for letter grades with the research adviser.

(5) Report Form Access: The information contained in the written report is intended for use by: (1) members of the Biomedical Engineering faculty who want information about a student's research experience and ability; (2) the Graduate Education Committee for student evaluation; and (3) faculty members asked to write letters of recommendation for students. The student will receive a copy of this report.

(6) Financial Remuneration: Directed research credit will not ordinarily be given for work done for financial remuneration.

(7) Non-Faculty and Non- Biomedical Engineering Faculty Project Director: Students may wish to work with project directors who do not hold a faculty appointment (e.g., research associates and research scientists) or with a non-Biomedical Engineering faculty member. In order for proper credit to be given, the student must submit a petition to the Graduate Education Committee (see Appendix B) detailing the project to be done and with whom it is to be done. The petition also must include the name of a Biomedical Engineering Core faculty member who will serve as surrogate and submit the grade. The faculty member will read the project report and will confer with the project director before a letter grade is given.

(8) The report must be given to Susan Graeber (SUGS) or Maria Steele (M.S., Ph.D.) at the end of the term in which the course is taken, even if a student is taking the course in multiple terms. A student will not receive a grade for the course unless the report has been turned in and a student will not be granted a M.S. degree without the report in the student's file.