

# GUIDE TO GENERAL EDUCATION ELECTIVES IN BIOMEDICAL ENGINEERING

## INTRODUCTION

General education is an important part of the biomedical engineering (BME) program at the Purdue School of Engineering and Technology, IUPUI. Perhaps moreso than in any other engineering discipline, BME students must possess good communication and critical thinking skills in order to interface effectively with colleagues in medicine, biology and engineering. Because their work directly impacts human lives through medicine, they also must be aware of the many ethical issues that may arise during their careers. Furthermore, they must be prepared to serve as effective leaders in society and policy-making relative to the development and use of technology in medicine and biology.

The IUPUI Department of Biomedical Engineering (BME) curriculum includes strong general education components to provide students an integrated and well-rounded education in the humanities, social sciences, fine arts, and related areas. A total of 12 credit hours of courses are required in the general education category. These courses are in addition to the 9 credit hours of courses in written communication (ENG W131), oral communications (COMM R110), technical communications (TCM 360), and engineering ethics (BME 404).

With the assistance of an academic advisor in the department, each student must select the 12 credit hours of general education courses in accordance with the following requirement and rules:

## REQUIREMENT

At least 6 credit hours of the 12 credits must be chosen from the approved list of courses that are indicated as having significant *contemporary*, *societal*, or *cultural* emphasis. Approved courses in this category are shown in **bold** on the Approved General Education Electives List below.

## ADDITIONAL RULES

1. General education electives may be found in subjects such as philosophy, religion, history, literature, fine arts, classical studies, sociology, psychology, anthropology, economics, geology, geography, environment, public affairs, music, and modern languages. A list of currently approved courses follows this list of rules.
2. Students are encouraged to explore different areas of general education.
3. At least two of the courses must be at 200 or higher level (to assure *depth*). In the case of foreign languages, however, coursework beyond the first three hours of a particular language may be used in place of 200-level courses.
4. To further assure *depth* a minimum of 6 credit hours must be selected in at least one department.
5. Courses taken must be from at least two different departments. To assure that students experience a *breadth* of topics, no more than 9 credits taken from one department will be counted as general education credit, including credit by examination.
6. When used as electives, modern language courses must include at least one 5 credit hour course or two 3- or 4 credit hour courses in a single language. Grammar or vocabulary courses in a student's native language may not count as a general education elective.

7. Courses such as accounting, industrial management, personal finance, ROTC, and personnel administration do not fulfill the purpose of the general education program, regardless of their general value in total engineering education, since they basically teach personal skills.
8. Courses that build skills, such as keyboard/computer music courses, physical education, photography, drawing etc., cannot be used to satisfy these general education requirements.
9. The Pass/Fail option may not be used for ANY courses on an engineering Plan of Study including general education electives. Also courses completed by correspondence may not be used on an engineering Plan of Study.
10. The approved list of courses may vary from semester to semester. Courses on the approved list during the semester the student takes the course will be accepted even if they are subsequently removed from the list.
11. Students may petition their academic advisor and department chairperson for approval of courses not listed here.

### APPROVED GENERAL EDUCATION ELECTIVES LIST

The approved general education courses are listed below. Those with strong *contemporary*, *societal*, or *cultural* emphasis are indicated with **bold** characters.

<i>Afro-American Studies:</i>	AFRO <b>A150, A202</b> , A303, <b>A352</b>
<i>American Studies:</i>	AMST A301, A302, A303, A304
<i>Anthropology:</i>	ANTH <b>A103, A104, A303, A304, A361, A454, B370, B371, E300, E310, E316, E320, E326, E335, E336, E356, E380, E384, E391, E402, E403, E411, E421, E445, E455, E457, E470, L300, L401, P220</b>
<i>Arabic:</i>	NELC <b>A117, A118, A119, A200, A250</b>
<i>Art:</i>	HER H100, H101, H103, H300, H301, H302, H326, H333, H334, H341, H342, H344, H345, H347, H351, H352, H355, H361, H362, H402, H404, H413, H414, H418
<i>Chinese:</i>	EALC <b>C117, C118, C119, C131, C132, C201, C202</b>
<i>Classical Studies:</i>	CLAS C205, C310, C311, C351, C361, C491
<i>Communication Studies:</i>	COMM T130, T133, T205, R310, T337, T338
<i>Economics:</i>	ECON E201, <b>E202, E303, E304, E305</b> , E307, E308, E321, E322, E323, E325, E363, E380, E385, E420, E430, E447, E485
<i>English:</i>	ENG <b>G104, G205, G310, L105, L115, L200, L202, L203, L204, L205</b> , L206, <b>L207, L213, L214, L200</b> and all <b>300</b> or higher level <b>ENG Lxx</b> courses
<i>Film Studies:</i>	FILM C292, <b>C390</b> , C391, C392, <b>C393, C394</b> , C398, C491,

C493

<i>Folklore:</i>	FOLK <b>F101, F131, F354</b> , F360, F363
<i>French:</i>	FREN <b>F117, F118, F119, F131, F132, F203, F204</b> , and all <b>300</b> or higher level FREN courses
<i>Geography:</i>	GEOG <b>G107, G110, G130, G315, G331</b>
<i>Geology:</i>	GEOL <b>G107, G110, G115, G132</b>
<i>German:</i>	GER <b>G117, G118, G119, G131, G132, G225, G230, G265</b> , and all <b>300</b> or higher level GER courses
<i>History:</i>	HIST <b>H105, H106, H108, H109, H113, H114</b> , H220, H221, and all <b>300</b> or higher level courses with prefix <b>A, B, C, D, F, G, or H</b> .
<i>Italian:</i>	ITAL <b>M117, M118, M119, M200</b>
<i>Japanese:</i>	EALC <b>J117, J118, J119, J131, J132, J201, J202, J301, J302, J394, J401</b> , and all Japanese culture courses taught in English EALC <b>E231, E351, E472</b>
<i>Latin:</i>	CLAS L131, L132, L200, L250
<i>Music:</i>	MUS M174, M393, M394, Z105, Z200, Z201, Z301, Z315, Z374, Z380, Z401
<i>Organizational Leadership and Supervision:</i>	OLS <b>263, 327, 331</b>
<i>Philosophy:</i>	PHIL <b>P110, P120, P162, P237, P265, P280, P281, P307, P314, P316, P317, P322, P323, P325, P326, P331, P358, P365, P367, P368, P369, P382, P383, P385, P393, P394, P414, P418, P448, P468</b>
<i>Political Science:</i>	POLS Y101, Y103, Y215, Y217, <b>Y219</b> , Y300 and higher level courses
<i>Psychology:</i>	PSY <b>B104, B310</b> , B334, B344, B354, B356, B360, B366, B368, B370, <b>B376</b> , B380, B424
<i>Public and Environmental Affairs:</i>	SPEA <b>V170, V264, V362, V366, V372, V376, V443, E162, E272, H120</b>
<i>Religious Studies:</i>	REL R100, R111, <b>R133</b> , R173, R200, R212, <b>R223</b> , R283, R293, <b>R300</b> , R303, R310, R312, <b>R313</b> , R326, <b>R339</b> , R343,

R344, **R352, R360, R361, R383, R393**

*Spanish:*

SPAN **S117, S118, S119, S131, S132, S203, S204, S210**, and all **S300** or higher level courses

*Sociology:*

SOC **R100, R121, R220, R234, R305, R312, R315, R317, R320, R321, R325, R329, R330, R338, R344, R345, R346, R356, R357, R381, R382, R410, R415, R425, R461, R463, R467, R476, R478, R480**