U.A. WHITAKER SCHOOL OF ENGINEERING
BACHELOR OF SCIENCE IN BIOENGINEERING (B.S.) - for Pre-Med Students
129 Credits

Freshman Year

Semester I			Semester 2		
Course Number	**Course Title**	**CR**	**Course Number**	**Course Title**	**CR**
EGN 1006L	Intro to Engineering Prof.	1	**EGN 1041C**	Computational Tools for Eng	2
ENC 1101	Composition I (W)	3	**PHY 2048C**	General Physics I	4
	Humanities*	3	**MAC 2312**	Calculus II	4
MAC 2311	Calculus I	4	**ENC 1102**	Composition II (W)	3
BSC 1010C	General Biology w/lab I	4	**HUM 2510**	Understanding Visual & Performing Arts	3
	Total	**15**		**Total**	**16**
Summer term					
BSC 1011C	General Biology w/lab II	4	← Not required for the B.S. in Bioengineering		
	Humanities*	3			
	Total	**7**			

Sophomore Year

Semester 3			Semester 4		
Course Number	**Course Title**	**CR**	**Course Number**	**Course Title**	**CR**
EGM 3420C	Engineering Mechanics	4	**EGN 3331C**	Mechanics of Materials	3
MAC 2313	Calculus III	4	**STA 2037**	Statistics with Calculus	3
CHM 1045C	Gen Chemistry w/Lab I	4	**MAP 2302**	Diff Equations	3
PHY 2049C	General Physics II	4	**CHM 1046C**	Gen Chemistry w/Lab II	4
	Total	**16**			
				Total	**13**
Summer term					
CHM 2210C	Organic Chem w/Lab I	4			
	Social Science*	3			
	Total	**7**			

*One of these courses must be a writing course to satisfy the Gordon Rule (W).

NOTE: Students must earn at least 9 semester hours by attending one or more summer sessions at a State University System member institution.

Junior Year

Semester 5			Semester 6		
Course Number	**Course Title**	**CR**	**Course Number**	**Course Title**	**CR**
EGN 3433C	Design for Manufacturing	2	**EGN 3641C**	Engineering Entrepreneurship	3
BME 3100C	Introduction to Biomaterials	3	**BME 3404C**	Human Physiology Engineers II	3
BME 3403C	Human Physiology Engineers I	3	**EGN 3374C**	Signals Syst Bioengineers	3
EGN 3373C	Circuits for Bioengineers	3	**BME 4800C**	Bioengineering Product Design	3
CHM 2211C	Organic Chem w/Lab II	4	**BME 3261C**	Biofluid Mechanics	3
	Total	**15**		**Total**	**15**

Senior Year

Semester 7			Semester 8		
Course Number	**Course Title**	**CR**	**Course Number**	**Course Title**	**CR**
BME 4884	Bioengineering Senior Design I	2	**BME 4885**	Bioengineering Sr Design II	2
BME 4632C	Biotransport Phenomena	3	**choose one**	BME 4504C Bioelectricity, **OR** BME 4332C Cellular & Tissue Engineering	3
BME 4503C	Biomedical Instrumentation	3	**BME 4211C**	Biomechanics	3
BME 4722	Health Care Engineering	3	**IDS 3920**	University Colloquium (W)	3
	Technical Elective**	4		Social Science*	3
	Total	**15**		**Total**	**14**

Total Hours = 129

Engineering common core - engineering courses
Engineering courses unique to B. S. in Bioengineering

** The Technical Elective must be approved by the Academic Advisor for engineering in consultation with the faculty.

Students interested in fulfilling pre-med requirements appropriate for applying to many medical schools in the U.S. must take CHM2211C Organic Chemistry with Lab II (4) as one technical elective. They should also take BSC1011C General Biology with Lab II (4) as an overload to the requirements for the B.S. Bioengineering major. Students should carefully check (well in advance) the application and admissions policies for each specific medical or health professions school that they intend to apply to following receipt of the B.S. Bioengineering degree in order to ensure that they have met all requirements.

Additional technical electives for pre-med and other pre-health professions students might include:

BCH3023C Biochemistry (3), or
PCB3023C Cell Biology (3), or
PCB3063C Genetics (3), or
PCB4233C Immunology (3)