

**U.A. WHITAKER COLLEGE OF ENGINEERING**  
**BACHELOR OF SCIENCE IN BIOENGINEERING (B.S.)**  
**129 Credits Total**

Freshman Year						
Semester 1 (Fall Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	EGS 1006L	Intro to Engineering Profession	1	MAC 1147	Fa, Sp	Meet with an engineering academic advisor and have a smart plan on file. Smart plans will be completed with the advisor and available to the student.
	ENC 1101	Composition I	3		Fa, Sp,Su	
	XXX XXXX	State Core Humanities*	3		Fa, Sp,Su	
	MAC 2311	Calculus I	4	MAC 1147 or MAC 2157	Fa, Sp,Su	
	CHM 1045 and CHM 1045L	Gen Chemistry I and Gen Chemistry I Lab	4	MAC 1105	Fa, Sp,Su	
<b>Total</b>		<b>15</b>				
Semester 2 (Spring Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	EGN 1041C	Computational Tools for Engineering	2	MAC 2311 and EGS 1006L	Fa, Sp	
	PHY 2048C	General Physics I w/lab	4	MAC 2311	Fa, Sp,Su	
	MAC 2312	Calculus II	4	MAC 2311	Fa, Sp,Su	
	ENC 1102	Composition II	3	ENC 1101	Fa, Sp,Su	
	CHM 1046 and CHM 1046L	Gen Chemistry II and Gen Chemistry II Lab	4	CHM 1045 and CHM1045L	Fa, Sp,Su	
<b>Total</b>		<b>17</b>				
Summer	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	XXX XXXX	Social Science* (recommend ECO 2013 or ECO 2023)	3		Fa, Sp,Su	Complete MAC 2312 with a minimum grade of "C"
	XXX XXXX	State Core Social Science* (recommend AMH 2020 or POS 2041)	3		Fa, Sp,Su	
	XXX XXXX	Humanities*	3		Fa, Sp,Su	
<b>Total</b>		<b>9</b>				

Sophomore Year						
Semester 3 (Fall Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	EGM 3420C	Engineering Mechanics	4	PHY 2048C	Fa, Sp	Complete EGN 1041C and BSC 1010C with a minimum grade of "C".
	MAP 2302	Differential Equation	3	MAC 2312	Fa, Sp,Su	
	BSC 1010C	General Biology I w/lab	4		Fa, Sp,Su	
	PHY 2049C	General Physics II w/lab	4	MAC 2312 and PHY 2048C	Fa, Sp,Su	
<b>Total</b>		<b>15</b>				
Semester 4 (Spring Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	EGN 3433C	Design For Manufacturing	3	EGN 1041C and PHY 2048C	Sp	Complete MAP 2302 and CHM 1046C with a minimum grade of "C".
	STA 2023	Statistical Methods	3	MAT 1033	Fa, Sp	
	MAC 2313	Calculus III	4	MAC 2312	Fa, Sp,Su	
BME 3403C	Human Physiology Engineers I	3	EGN 1041C, BSC 1010C, CHM 1046,CHM1046L, MAP 2302 and PHY 2048C	Sp		
<b>Total</b>		<b>13</b>				

**\*Special Notes:**  
 Students must earn at least 9 semester hours by attending one or more summer sessions.

Students should be sure one of their social science or humanities include 1 course that is designated with an attribute for College Level Writing Skills (CLWS), 2 courses that are designated with an attribute for Intercultural Knowledge (INKN), and 1 course that satisfies the Civic Literacy requirement. Please be aware that 1 course may satisfy multiple attributes. Example: AML 2010 = Humanities, College Level Writing, and Intercultural Knowledge (GEHM, CLWS, INKN)

\*Prerequisites for Coursework (all prerequisites require a minimum grade of C)  
 \*\* The Technical Electives must be approved by the Bioengineering Department and together must total at least 6 credit hours.

<http://www.fgcu.edu/Eng/BioDpt/biobs/student-resources.html>

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Summer	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	CHM 2210 and CHM 2210L	Organic Chemistry I and Orgo Chemistry I Lab	4	CHM 1046 and CHM1046L	Fa, Sp,Su	Complete MAP 2302 and CHM 1046C with a minimum grade of "C".
	BSC 1011C	General Biology II w/lab	4	BSC 1010C	Fa, Sp,Su	
<b>Total</b>		<b>8</b>				

**Junior Year**

Semester 5 (Fall Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	XXX XXXX	Restricted Elective 1**	3		Fa, Sp,Su	Complete EGM 3420C and PHY 2049C with a minimum grade of "C".
	BME 3100C	Introduction to Biomaterials	3	EGN 3420C, CHM 1046 and CHM 1046L and (STA 2023 or STA 2037)	Fa	
	BME 3404C	Human Physiology Engineers II	3	BME 3403C and PHY 2049C	Fa	
	BME 4722	Health Care Engineering	3	STA 2023 or STA 2037	Fa	
	BME 3506C	Circuits for Bioengineers	3	PHY 2049C and MAP 2302	Fa	
<b>Total</b>		<b>15</b>				

Semester 6 (Spring Term)	Course	Course Title	CR	Prerequisites*	Offered	Milestone
	XXX XXXX	Restricted Elective 2**	3		Fa, Sp,Su	Complete EGN 3433C and BME 3403C with a minimum grade of "C".
	EGN 3060C	Introduction to Mechatronic Design	3	PHY 2049C and (EGM 3420C or COP 2001)	Sp	
	BME 3507C	Signals Syst Bioengineers	3	MAC 2312, PHY2049C, EGN 1041C and BME 3403C	Sp	
	BME 4800C	Bioengineering Product Design	3	BME 3100C and EGN 3433C	Sp	
	BME 4332C	Cellular and Tissue Engineering	3	BME 3100C and BME 3403C	Sp	
<b>Total</b>		<b>15</b>				

**Senior Year**

Semester 7 (Fall Term)	Course	Course Title	CR	Prerequisites	Offered	Milestone
	BME 4884	Bioengineering Senior Design I	2	EGN 3XXXC, BME 4332C, BME 4800C, BME 3507C and BME 4722	Fa	Make a graduation check appointment with advising. Complete BME 3100C and BME 3506C with a minimum grade of "C". Apply for graduation by the deadline.
	BME 4211C	Biomechanics	3	EGN 3420C and BME 3403C	Fa	
	BME 4503C	Biomedical Instrumentation	3	BME 3506C, BME 3507C and BME 3404C	Fa	
	BME 3261C	Biofluid Mechanics	3	BME 3100C and MAC 2313	Fa	
	XXX XXXX	Humanities*	3			
<b>Total</b>		<b>14</b>				

Semester 8 (Spring Term)	Course	Course Title	CR	Prerequisites	Offered	Milestone
	BME 4885	Bioengineering Sr Design II	3	BME 4884 and BME 3404C	Sp	
	BME XXXX	BME Required Course***	3		Fa, Sp	
	BME 4632C	Biotransport Phenomena	3	BME 3261C	Sp	
	IDS 3920	University Colloquium	3		Fa, Sp,Su	
<b>Total</b>		<b>12</b>				

Engineering Common Core - Engineering Courses	<b>10</b>
Engineering Courses unique to B. S. in Bioengineering	<b>47</b>

General Education & Other Required Courses	<b>72</b>
<b>Total Engineering Credits</b>	<b>57</b>
<b>Total Degree Credits</b>	<b>129</b>

**\*Special Notes:**

Students must earn at least 9 semester hours by attending one or more summer sessions.

Students should be sure one of their social science or humanities include 1 course that is designated with an attribute for College Level Writing Skills (CLWS), 2 courses that are designated with an attribute for Intercultural Knowledge (INKN), and 1 course that satisfies the Civic Literacy requirement. Please be aware that 1 course may satisfy multiple attributes. Example: AML 2010 = Humanities, College Level Writing, and Intercultural Knowledge (GEHM, CLWS, INKN)

\*Prerequisites for Coursework (all prerequisites require a minimum grade of C)

\*\* The Restricted Electives must be approved by the Bioengineering Department and together must total at least 6 credit hours. For most pre-med students this will be CHM 2211 w/Lab and BCH 3023C

\*\*\* The BME Required Course must be from the approved list provided in the course catalog. Note that not all approved courses are available in each term

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