



TEMPLE UNIVERSITY - COLLEGE OF ENGINEERING
BACHELOR OF SCIENCE IN BIOENGINEERING (BSBioE)
Neuro-Engineering Pathway¹
PROGRAM OUTLINE 2015-2016

Grade	Credits	First Semester		Grade	Credits	Second Semester	
	3	ENGR 1101	Intro to Engineering and Engineering Technology		4	MATH 1042	Calculus II
	4	MATH 1041	Calculus I [GQ]		4	PHYS 1061	Elementary Classical Physics I [GS]
	3	CHEM 1031	General Chemistry I		2	BIOE 2001	Frontiers of Bioengineering
	1	CHEM 1033	General Chemistry Lab I		3	IH 0851	Mosaic I [GY]
	4	ENG 0802	Analytical Reading and Writing [GW]		3	CHEM 1032	General Chemistry II
					1	CHEM 1034	General Chemistry Lab II
Total:	15			Total:	17		
Grade	Credits	Third Semester		Grade	Credits	Fourth Semester	
	4	MATH 2043	Calculus III		3	MATH 3041	Differential Equations
	4	PHYS 1062	Elementary Classical Physics II [GS]		3	ENGR 3571	Classical & Statistical Thermodynamics
	4	BIOL 2112	Introduction to Biology II		3	BIOE 2101	Eng. Principles of Physiological Systems w/Lab
	3	CHEM 2201	Organic Chemistry I		3	ENGR 2196	Technical Communications
	1	CHEM 2203	Organic Chemistry Laboratory I		4	BIOL 1111	Introduction to Biology I
Total:	16			Total:	16		
Grade	Credits	Fifth Semester		Grade	Credits	Sixth Semester	
	2	BIOE 3001	Research Design and Methods		3	BIOE 3102	Bioengineering Lab 2: Biomaterials
	3	BIOE 3101	BIOE Lab #1: Bioelectrical Engineering		3	GenEd 08xx	Human Behavior [GB]
	2	BIOE 3201	Biomedical Instrumentation		3	GenEd 08xx	Race & Diversity [GD]
	3	BIOL 3352	Systems Neuroscience		1	ENGR 4169	Engineering Seminar
	3	Elective	Free Elective ²		3	BIOE 3301	Biomedical Signals and Systems
	3	IH 0852	Mosaic II [GZ]		3	BIOE 3725	Cell Biology for Engineers
Total:	16			Total:	16		
Grade	Credits	Seventh Semester		Grade	Credits	Eighth Semester	
	1	ENGR 4196	Senior Design Project I [WJ] ³		3	ENGR 4296	Senior Design Project II [WJ]
	3	BIOE 4101	Bioengineering Lab 3: Biomechanics		3	Elective	Bioengineering Technical Elective #1
	3	BIOE 4431	Capstone: NeuroEngineering		3	Gen Ed xxxx	US Society [GU]
	3	Gen Ed xxxx	World Society [GG]		3	Gen Ed xxxx	Arts [GA]
	3	BIOL 3354	Neural Basis of Animal Behavior		3	Elective	Free Elective ²
	2	BIOE 4311	The Entrepreneurial BioEngineer				
Total:	15			Total:	15		

Total: 126

¹ **Note: This pathway requires additional courses outside of degree requirements**

² One of the free electives must be an approved engineering elective – see advisor for course selection.

³ Students must complete the following prerequisites before registering for ENGR 4196 – Senior Design I: **BIOE 3101, BIOE 3001, BIOE 3201, and BIOE 3102**. Although students may be permitted to take of the courses listed above concurrently, it is strongly recommend that these courses be completed before registering for ENGR 4196.