

Department of Physics | Engineering Dual Degree Curriculum
 Example Course Plan for B.A. in Physics + B.S. in Biomedical Engineering from UND



First Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
CCC 100	Introduction to College Writing	3	AC	
MATH 135	Calculus I ¹	4	AC	
CHEM 105/117	General Chemistry I & Lab	4	AC	
GCON XXX	Great Conversation Course	3	AC	
GCON XXX	Great Conversation Course	3	AC	

Second Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
MATH 215	Calculus III	4	AC	MATH205
PHYS 202/204	General Phys: Therm. & Electromagnetics/Laboratory ⁴	4	AC	
GCON XXX	Great Conversation Course	3	AC	
BME 180	Biomedical Engineering Innovation-Based Learning I	2	UND	
EE 221/L	Electrical Circuits I/ Laboratory	4	UND	MATH135

Third Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 3XX/4XX	Elective	3	AC	MATH215 or MATH305, PHYS202, PHYS204
PHYS 3XX/4XX	Elective	3	AC	MATH215 or 305, PHYS202,
MATH XXX	Linear Algebra ³	3	AC or UND	MATH135
BME 380	Junior Innovation-Based Learning I	2	UND	MATH215/BME180, MATH305
EE 304	Computer Aided Measurement and Controls	3	UND	MATH135
BME 280	Biomedical Engineering Innovation-Based Learning III	2	UND	BME181, MATH205

Fourth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 375	Quantum Physics	3	AC	
BME 480	Senior Innovation Based Learning I	3	UND	BME381, BME280
EE 360/EE314L	Signals and Systems/ Laboratory	4	UND	
EE 321/L	Electronics I & Lab ⁴	4	UND	
EE 385	Engineering Data Analysis	3	UND	

Fifth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHIL304	Ethics	3	AC	
BME 430	Fundamentals of Biomedical Imaging ⁶	3	UND	EE 314
BME XXX	Elective	3	UND	
ENGR 460	Engineering Economy	3	UND	MATH135
	Statistics Elective	3	UND	

First Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
CCC 102	Public Speaking	3	AC	
MATH 205	Calculus II ¹	4	AC	MATH135
PHYS 201/203	General Physics: Mechanics/ Laboratory ⁴	4	AC	MATH135/ MATH205
ENGR 200	Computer Applications in Engr. ²	2	UND	MATH135
EE 111/L	Digital Circuits/ Laboratory	4	UND	

Second Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
MATH 305	Differential Equations	3	AC	
PSYC 100	General Psychology	3	AC	
GCON XXX	Great Conversation Course	3	AC	MATH205
BME 181	Biomedical Engineering Innovation-Based Learning II	2	UND	BME180, MATH135
EE 222/L	Electrical Circuits II/ Laboratory	4	UND	EE 221/L

Third Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 301 + 303	Oscillations, Wave and Light + Lab	4	AC	MATH205, PHYS201, PHYS203
PHYS 424	Junior Physics Lab (WID/EXP)	3	AC	
GCON XXX	Great Conversation Course	3	AC	
BME 281	Biomedical Engineering Innovation-Based Learning IV	2	UND	BME280, MATH205/MATH215
BME 381	Junior Innovation-Based Learning II	2	UND	BME180, BME380, MATH305/BME181
EE 211	Embedded Systems	3	UND	EE 111/L

Fourth Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 385	20 th Century Physics	3	AC	
PHYS 454	Capstone: Senior Project	1	AC	
BME 481	Senior Innovation Based Learning II	3	UND	BME480, BME281
EE 322	Electronics II	3	UND	
BME 450	Biomedical Instrumentation (Medical IoT Innovation I)	3	UND	EE314, EE321
BME 432	Fundamentals of Biomedical Optics ⁵	3	UND	PHYS 301/303, EE 314

NOTES				
¹ Math 135 and MATH 205 combine for equivalency to MATH 165 and 166 at UND.				
² UND'S ENGR200 substitutes for AC's CS103				
³ Student can either take MATH303 at AC or MATH207 at UND.				
⁴ PHYS 201, 202, 203, & 204 satisfies UND's PHYS 251 and PHYS 252 requirement.				
⁵ UND's BME432 counts for AC Physics elective				
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