

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

ADRIAN COLLEGE

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 Adrian, MI 49221
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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	MATH215
PHYS 202/204	General Phys: Therm. & Electromagnetics/Laboratory ²	4	AC	PHYS201, PHYS203
GCON XXX	Great Conversation Course	3	AC	
ENGR 200	Computer Applications in Engr. ³	2	UND	MATH135
ENGR 201	Statics	3	UND	MATH135
CE 101	Introduction to Civil Engineering	1	UND	

Third Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 3XX/4XX	Elective	3	AC	MATH215 or MATH305, PHYS202, PHYS204
PHYS 375	Quantum Physics	3	AC	MATH215 or MATH305, PHYS202, PHYS204
ENGR 202	Dynamics	3	UND	ENGR201, MATH205, PHYS201, PHYS203
CE 306	Fluid Mechanics ⁴	3	UND	PHYS201, PHYS203, MATH215
CE 412	Soil Mechanics	3	UND	ENGR203

Fourth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 3XX/4XX	Elective	3	AC	MATH215 or MATH305, PHYS202, PHYS204
ENGR 460	Engineering Economy	3	UND	MATH135
CE 351	Structural Mechanics ⁵	4	UND	ENGR203
CE 313	General Surveying	2	UND	MATH135
CE 482	Civil Engineering Design I ⁶	3	UND	(see note below) ⁶

First Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
CCC 102	Public Speaking	3	AC	
MATH 205	Calculus II ¹	4	AC	MATH135
GCON XXX	Great Conversation Course	3	AC	
PHYS 201/203	General Physics: Mechanics/ Laboratory ²	4	AC	MATH135/ MATH205
CE 103	Graphical Communication	3	UND	

Second Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
MATH 305	Differential Equations	3	AC	MATH205
GEOL 101	Physical Geology	4	AC	
GCON XXX	Great Conversation Course	3	AC	
ENGR 203	Mechanics of Materials	3	UND	ENGR201, MATH205, PHYS201, PHYS203
MATH 321	Applied Statistical Methods	3	UND	MATH205

Third Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 385	20 th Century Physics	3	AC	PHYS375
PHYS 424	Junior Physics Lab (WID/EXP)	3	AC	
CE 423	Hydraulic Engineering	3	UND	CE306
CE 414	Foundation Engineering	3	UND	CE412
CE 444	Contracts and Specifications	3	UND	

Fourth Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 301 + 303	Oscillations, Wave and Light + Lab	4	AC	MATH205, PHYS201, PHYS203
PHYS 454	Capstone: Senior Project	1	AC	
CE 416	Transportation Engineering	3	UND	CE313
CE 431	Principles of Water and Wastewater Treatment	3	UND	CE306
CE 451	Steel Design	3	UND	CE351
CE 483	Civil Engineering Design II	3	UND	CE482

Fifth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHIL304	Ethics	3	AC	
CE 421	Hydrology	3	UND	CE306, CE423
CE 432	Environmental Engineering Design	3	UND	CE 423
CE 453	Reinforced Concrete	3	UND	CE451

SUMMER LABS (On UND Campus)	Credits	When to Take
CE 313L: General Surveying Lab	1	After Fourth Year Spring
CE 411: Civil Engineering Materials Lab	1	After Fourth Year Spring
CE 412L: Soil Mechanics Lab	1	After Fourth Year Spring
CE 423L: Hydraulic Lab	1	After Fourth Year Spring
CE 431L: Environmental Engineering Lab	1	After Fourth Year Spring

NOTES
¹ Math 135 and MATH 205 combine for equivalency to MATH 165 and 166 at UND.
² PHYS 201, 202, 203, & 204 satisfies UND's PHYS 251 and PHYS 252 requirement.
³ UND'S ENGR200 substitutes for AC's CS103
⁴ UND's CE306 counts for AC Physics elective
⁵ UND's CE351 counts for AC Physics elective
⁶ Prerequisites for CE482 are CE412 OR CE451 and one of CE423 or CE431