

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

ADRIAN COLLEGE

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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	

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 ³	4	AC	MATH135/ MATH205
ME 101	Introduction to Mechanical Engineering	3	UND	
ENGR 200	Computer Applications in Engr. ²	2	UND	MATH135

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 ³	4	AC	PHYS201, PHYS203
GCON XXX	Great Conversation Course	3	AC	
ENGR 201	Statics	3	UND	MATH135
ENGR 206	Fundamentals of EE	3	UND	MATH135

Second Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
MATH 305	Differential Equations	3	AC	MATH205
GCON XXX	Great Conversation Course	3	AC	
GCON XXX	Great Conversation Course	3	AC	
ME 201C	Student Design	2	UND	ME101, PHYS201, PHYS203, ENGR201
ENGR 202	Dynamics	3	UND	ENGR201, MATH205, PHYS201, PHYS203

Third Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 3XX/4XX	Physics Elective ⁴	3	AC	
ENGR 203	Mechanics of Materials	3	UND	ENGR201, MATH205, PHYS201, PHYS203
ME 301	Materials Science	3	UND	CHEM105, CHEM117, PHYS202, PHYS204
ME 306	Fluid Mechanics ⁶	3	UND	PHYS201, PHYS203, MATH215
ME 341	Thermodynamics ⁶	3	UND	MATH215, PHYS201, PHYS203

Third Year Spring				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 424	Junior Physics Lab (WID/EXP)	3	AC	PHYS 3XX/4XX
ME426	Mechanical Vibrations ⁵	3	UND	MATH305
ME 418	Manufacturing Processes ⁸	3	UND	
ME 323/L	Machine Component Design & Lab	4	UND	ENG203, ME101
ME 474	Fundamentals of Heat and Mass Transfer	3	UND	ME341, ME306, MATH305

Fourth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHYS 375	Quantum Physics	3	AC	
PHYS 3XX/4XX	Physics Elective	3	AC	
ME 324	Control Systems	3	UND	ME202, MATH305
ME 480	Mechanical Engineering Seminar	3	UND	Senior Standing, CCC100 / ME487
ENGR 460	Engineering Economy	3	UND	MATH135
ME 487	Engineering Design ⁷	2	UND	(see note below)

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	
MATH 321	Applied Statistical Methods	3	UND	MATH 205
XX XXX	Technical Elective	3	UND	
ME 488	Engineering Design	3	UND	ME487
XX XXX	Technical Elective	3	UND	

Fifth Year Fall				
Course #	Course Name	Credits	Where	Prereqs/Coreqs
PHIL304	Ethics	3	AC	
XX XXX	Technical Elective	3	UND	
XX XXX	Technical Elective	3	UND	
XX XXX	Technical Elective	3	UND	
SUMMER LABS (On UND Campus)		Credits	When to Take	
ME 201CL: Student Design Lab		2	After Second Year Spring	
ME 418L: Manufacturing Processes Lab		1	After Third Year Spring	
ME 483: Mechanical Measurements Lab		3	After Third Year Spring	

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 PHYS 201, 202, 203, & 204 satisfies UND's PHYS 251 and PHYS 252 requirement.
⁴ PHYS3XX or greater substitutes for one UND Technical Elective.
⁵ UND's ME426 (Technical Elective) substitutes for AC's PHYS 301+303
⁶ UND's ME306 and ME341 counts for AC's Physics electives
⁷ Prerequisite: ME 323, ME 323L, ME 474 or any one elective from the thermal science group. Corequisite: ENGR 460, ME 301, and ME 483. F.
⁸ ME 418 lecture taken in spring term; 1 cr. lab must be taken the following summer.