

Department of Geology | Engineering Dual Degree Curriculum
 Example Course Plan for B.A. in Geology + B.S. in Petroleum 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 | |
| GEOL 101 | Physical Geology | 4 | AC | |

| First Year Spring | | | | |
|-------------------|---|---------|-------|-----------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| CCC 102 | Public Speaking | 3 | AC | |
| MATH 205 | Calculus II ² | 4 | AC | |
| CHEM 106/118 | General Chemistry II & Lab | 4 | AC | |
| PHYS 201/203 | General Physics: Mechanics/ Laboratory ² | 4 | AC | MATH135/MATH205 |

| Second Year Fall | | | | |
|------------------|---|---------|-------|------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| MATH 215 | Calculus III | 4 | AC | |
| PHYS 202/204 | General Phys: Therm. & Electromagnetics/Laboratory ² | 4 | AC | PHYS201, PHYS203 |
| GEOL 316 | Paleontology | 4 | AC | GEOL101, GEOL102 |
| GCON XXX | Great Conversation Course | 3 | AC | |
| PTRE 201 | Introduction to Petroleum Engineering | 3 | UND | GEOL 101 |

| Second Year Spring | | | | |
|--------------------|---------------------------------------|---------|-------|----------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| MATH 305 | Differential Equations | 3 | AC | |
| GEOL 102 | Historical Geology | 4 | AC | |
| GEOL 307 | Structural Geology | 4 | AC | GEOL101 |
| GEOL 321 | Contaminated Soil & Groundwater (WID) | 3 | AC | GEOL307 |
| PTRE 301 | Reservoir Rock Properties | 3 | UND | |

| Third Year Fall | | | | |
|-----------------|---------------------------|---------|-------|---------------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| GEOL 318 | Field & Lab Methods (EXP) | 4 | AC | GEOL307 |
| GCON XXX | Great Conversation Course | 3 | AC | |
| GCON XXX | Great Conversation Course | 3 | AC | |
| ME 341 | Thermodynamics | 3 | UND | PHYS201, PHYS203, MATH205 |
| ME 306 | Fluid Mechanics | 3 | UND | PHYS201, PHYS203, MATH215 |

| Third Year Spring | | | | |
|-------------------|--|---------|-------|---------------------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| GEOL 303 | Earth Materials | 4 | AC | GEOL101 |
| GEOL 314 | Sedimentology & Stratigraphy | 4 | AC | GEOL101 |
| ESS 375 | Geographic Information & Positioning Systems | 4 | AC | |
| PTRE 311 | Petroleum Fluid Properties | 3 | UND | CHEM106, CHEM118/ME241, PTRE301 |

| Fourth Year Fall | | | | |
|------------------|-------------------------------------|---------|-------|----------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| GEOL 403 | Capstone: Senior Research | 2 | AC | GEOL307 or 314 |
| ENGR 201 | Statics | 3 | UND | MATH135 |
| PTRE 405 | Petroleum Engineering Economy & Law | 3 | UND | |
| PTRE 401 | Well Logging | 3 | UND | PTRE301 |
| PTRE 411 | Drilling Engineering | 3 | UND | |
| PTRE 431 | Reservoir Engineering | 3 | UND | PTRE311, ME306 |

| Fourth Year Spring | | | | |
|--------------------|-------------------------------|---------|-------|------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| GCON XXX | Great Conversation Course | 3 | AC | |
| MATH 321 | Applied Statistical Methods | 3 | UND | MATH205 |
| GEOL 407 | Petroleum Geology | 3 | UND | |
| PTRE 445 | Well Testing | 3 | UND | PTRE431, MATH305 |
| PTRE 451 | Advanced Drilling Engineering | 3 | UND | PTRE411 |

| Fifth Year Fall | | | | |
|-----------------|--------------------------------|---------|-------|------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| GCON XXX | Great Conversation Course | 3 | AC | |
| PTRE 421 | Production Engineering | 3 | UND | PTRE431, ME306 |
| PTRE 465 | Petroleum Geomechanics | 3 | UND | PTRE411 |
| PTRE 471 | Numerical Reservoir Simulation | 3 | UND | PTRE431, MATH305 |
| PTRE 484 | Research Design | 3 | UND | PTRE401, GEOL407 |

| Fifth Year Fall | | | | |
|-----------------|--------------------------------------|---------|-------|---------------------------|
| Course # | Course Name | Credits | Where | Prereqs/Coreqs |
| PHIL 304 | Ethics | 3 | AC | |
| ENGR 200 | Computer Applications in Engineering | 3 | UND | MATH135 |
| ENGR 203 | Mechanics of Materials | 3 | UND | MATH135, PHYS201, PHYS203 |
| PTRE 475 | Well Completions | 3 | UND | PTRE421 |
| PTRE 485 | Senior Design ³ | 3 | UND | |

| SUMMER LABS (On UND Campus) | | Credits | When to Take |
|--|--|---------|-------------------------|
| PTRE 361: Petroleum Engineering Lab I | | 1 | After Fifth Year Spring |
| PTRE 462: Petroleum Engineering Lab II | | 1 | After Fifth 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 Prerequisite: PTRE 484, PTRE 405, PTRE 421, PTRE 451, PTRE 465, and PTRE 471; all prerequisites must be completed with a "C" or higher. S. | | | | |