

# Articulation Agreement

## University of North Dakota and Benedictine College

Atchison, KS

**Degree: Bachelor of Science in Chemical Engineering**

**Major: CHEMICAL ENGINEERING**

The following information was updated according to the 2013-2015 UND CATALOG - Students satisfactorily completing the courses below may transfer them to UND in fulfillment of the corresponding course requirements for this degree. Essential Studies equivalencies, courses, and major requirements may change. An official evaluation of transfer credit will be done upon admission to the university. Transfer credits will be evaluated and applied according to the current catalog and the approved Essential Studies list at the first semester of enrollment at UND.

Students planning to transfer to UND are encouraged to have phone or email contact with a UND adviser. Students may call the Advising Office at 1-800-CALL-UND ext. 3411 or 777-3411.

Note that 133 credits are required to graduate with a chemical engineering degree from UND.

\*\*Requires completion of B.S. or B.A. Degree in Chemistry from Benedictine College.

| BC   |     | Course/Credits/Title            | UND             |     | Course/Credits/Title                   |
|--|-----|---------------------------------|-----------------|-----|--|
| <b><u>I. Communication - COM</u></b>   |     |                                 |                 |     |  |
| En 101   | 3   | English Composition             | ENGL 110        | 3   | College Composition I                  |
| En 326 or  | 3   | Advanced Composition or         | ENGL 130        | 3   | College Comp II: Writing for Public Au |
| Eg 217   | 3   | Technical Communications        | ENGL 130        | 3   | College Comp II: Writing for Public Au |
| <b><u>II. Social Science - SS</u></b>  |     |                                 |                 |     |  |
| Eg 317   | 3   | Engineering Economics           | ENGR 460        | 3   | Engineering Economics (ChE Busine      |
| Ph 325   | 3   | Ethics                          | ChE 340         | 3   | Professional Integrity in Engineering  |
| Elective Credit  | 3   | Elective Credit                 | Elective Credit | 3   | Elective Credit                        |
| <b><u>III. Arts and Humanities - FA/HUM</u></b>  |     |                                 |                 |     |  |
| Elective Credit  | 9*  | Credit from at least two depts. | Elective Credit | 9*  | Credit from at least two depts.        |
| *must include 3 credits designated as Fine Arts and 3 credits designated as Humanities |     |                                 |                 |     |  |
| <b><u>IV. Mathematics, Science &amp; Technology - MST</u></b>                          |     |                                 |                 |     |  |
| Ch 103/105   | 3/1 | General Chemistry I/Lab         | CHEM 121/L      | 3/1 | Fundamentals of Chemistry I            |
| Ma 131   | 4   | Calculus I                      | MATH 165        | 4   | Calculus I                             |
| Ma 132   | 4   | Calculus II                     | MATH 166        | 4   | Calculus II                            |
| <b><u>Other Program Requirements</u></b>   |     |                                 |                 |     |  |
| Ch 104/106   | 3/1 | General Chemistry II/Lab        | CHEM 122/L      | 3/1 | Fundamentals of Chemistry II           |
| Ch 231/232   | 3/1 | Organic Chemistry I/Lab         | CHEM 341/L      | 4/1 | Organic Chemistry I/Lab                |
| Ch 380   | 3   | Thermodynamics                  | CHEM 470        | 3   | Thermodynamics and Kinetics            |
| Ma 233   | 4   | Calculus III                    | MATH 265        | 4   | Calculus III                           |
| Ma 310   | 3   | Differential Equations          | MATH 266        | 3   | Intro to Differential Equations        |
| Pc 210   | 4   | Classical Physics I             | PHYS 251/L      | 3/1 | University Physics I                   |
| Pc 211   | 4   | Classical Physics II            | PHYS 252/L      | 3/1 | University Physics II                  |
| <b><u>Engineering Science</u></b>  |     |                                 |                 |     |  |
| Eg 230   | 3   | Statics                         | ENGR 201        | 3   | Statics                                |
| Eg 231   | 3   | Dynamics                        | ENGR 202        | 3   | Dynamics                               |
| Eg 320   | 3   | Mechanics of Materials          | ENGR 203        | 3   | Mechanics of Materials                 |
| Eg 350   | 3   | Properties of Materials         | ME 301          | 3   | Materials of Science                   |

## Other

|           |   |                                |               |   |                       |
|-----------|---|--------------------------------|---------------|---|-----------------------|
| Ba 155    | 2 | Intro to Individual Leadership | Elect. Credit | 2 | Business Elective     |
| Ba 225    | 3 | Principles of Management       | Elect. Credit | 3 | Business Elective     |
| Ba 255    | 2 | Teams and Leaders              | Elect. Credit | 2 | Business Elective     |
| Ba 340    | 3 | Small Business Management      | Elect. Credit | 3 | Business Elective     |
| Ba 343    | 3 | Principles of Entrepreneurship | Elect. Credit | 3 | Business Elective     |
| Ba 350    | 3 | Organizational Behavior        | Elect. Credit | 3 | Business Elective     |
| Chem 300+ | 6 |                                | Elect. Credit | 6 | Adv. Chem Science     |
| Chem 300+ | 6 |                                | Elect. Credit | 6 | Tech Elect. I & II    |
| Ee 206    | 3 | Circuit Analysis               | EE 206        | 3 | Circuit Analysis      |
| Eg 317    | 3 | Engineering Economic Analysis  | ENGR 460      | 3 | Engineering Economics |
| Pc 350    | 3 | Electronics                    | EE 206        | 3 | Circuit Analysis      |

## Chemical Engineering

|            |   |   |               |   |                                   |
|------------|---|---|---------------|---|-----------------------------------|
| Ce 201     | 3 | Chemical Engineering Fundamentals       | ChE 201       | 3 | Chemical Engineering Fundamentals |
| Eg 120     | 2 | Intro to Engineering                    | ChE 102       | 2 | Intro to Chemical Engineering     |
| Eg 315     | 3 | Statistical Data Analysis               | ChE 315       | 3 | Statistics and Numerical Methods  |
| Eg 330 and | 4 | Fluid Mechanics and                     | ChE 206       | 3 | Unit Operations in ChE and        |
| Eg 360     | 4 | Heat and Mass Transfer                  | ChE 301       | 4 | Transport Phenomena               |
| Ce 305     | 4 | Separations & Unit Operations in ChE    | ChE 305       | 3 | Separations                       |
| Òg 340     | 2 | Engineering Laboratory I                | ChE 232       | 2 | Chemical Engineering Lab I        |
| Eg 341     | 2 | Engineering Laboratory II               | ChE 331       | 2 | Chemical Engineering Lab II       |
| **Waived   |   |   | ChE 102       | 2 | Intro to Chemical Engineering     |
| **Waived   |   |   | ChE 235       | 3 | Chemical Engineering Summer Lab I |
| CS 230     | 3 | Computer Programming for Engineers & Sc | Elect. Credit | 3 | Technical Elective II             |
| Eg 110     | 2 | Technical Drawing                       | Elect. Credit | 3 | Technical Elective II             |

When choosing your Essential Studies (General Education) Courses in Communication, Social Science, Arts and Humanities, and Math, Science and Technology, you will need to consider how you will meet the special emphasis requirements. Courses listed above that meet a special emphasis requirement are marked as follows: Oral Communication requirement (O), Social-Cultural Diversity requirement: United States (U), Social-Cultural Diversity requirement: Global (G), Quantitative Reasoning requirement (Q), and Advanced Communication requirement (A). To learn more please go to <http://und.edu/academics/essential-studies> or check with your adviser.

All students-including transfers-are required to take an Essential Studies upper division Capstone (C) course at UND. Approved Capstone courses are taken in the senior year of a student's undergraduate program.

Additional classes will be required to earn the above degree; a minimum of 125 credits is required to graduate from UND. Transfer credit for courses other than those listed above will be evaluated on a course-by-course basis.