

**Mesabi Range Community and Technical College**  
**University of Minnesota, Duluth**

**2 + 2 Program in Chemical Engineering**

Listed below are the courses offered at Mesabi Community College that apply to the Bachelor of Science in Chemical Engineering at the University of Minnesota, Duluth. After successful completion of the listed Mesabi courses, students may complete the Chemical Engineering program in two years of fulltime study at UMD.

<b>Mesabi Community College Courses to Complete</b>	<b>cr</b>	<b>UMD requirement completed by Mesabi courses</b>	<b>cr</b>
Chem 1522 General Chemistry I	5	Chem 1151 General Chemistry I	5
Chem 1523 General Chemistry II	5	Chem 1152 General Chemistry II	5
Chem 2512 Organic Chemistry I	5	Chem 2521 Organic Chemistry I	4
Chem 2513 Organic Chemistry II	5	Advanced Chemistry requirement	4
CSci 1466 FORTRAN Programming	3	CS 1135 FORTRAN Programming	2
Engl 1511 College Writing I	4	Comp 1120 College Writing	3
Engr 2262 Statics and Dynamics	5	Engr 2015 Statics	2
Math 1561 Calculus I	5	Math 1296 Calculus I	5
Math 1562 Calculus II	5	Math 1297 Calculus II	5
Math 2564 Diff Equations w/ Linear Algebra	5	Math 3280 Diff Equations w/ Linear Algebra	4
Phys 1571, 1591 Engineering Physics I & Lab	5	Phys 1201 Mechanics	4
Phys 1572, 1582 Engineering Physics II & Lab	5	Phys 1202 Heat and Electricity	4
Phys 2576, 2586 Circuit Analysis and			
Liberal Education		Liberal Education courses	

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**Courses to be Completed at UMD:**

ChE 1011 Intro to Chemical Engineering, 3 cr	ChE 4111 Separations, 3 cr
ChE 3111 Fluid Mechanics, 3 Cr	ChE 4401 Process Control, 3 cr
ChE 2111 Material and Energy Balances, 3 cr	ChE Electives I & II, 6 cr
ChE Heat and Mass Transfer, 3 cr	Chem 4641 Physical Chemistry I, 4 cr
ChE 3231 Properties of Engineering Materials, 3 cr	Engr 3201 Electrical Power, 3 cr
ChE 3211-4211 Chem Engineering Lab 1-11, 4 cr	Engr 2016 Mechanics of Materials, 3 cr
ChE 2011 Design of Engm0eting Experiments, 3 cr	Comp 3130 Advanced Writing, 3 cr
ChE 2121 Thermodynamics, 3 cr	Advanced Lib Ed (approved by Chem Eng dept)
ChE 4301 Chemical Reaction, Engineering, 3 cr	Liberal Education courses
ChE 4501-4502 Chem Engineering Design I-II, 8 cr	

**Bachelor of Science Chemical Engineering:** Chemical engineers develop new methods for the commercial production and control of such vital products as chemicals, minerals, and fossil fuels as well as the control of polluting and toxic substances. They use their knowledge of materials, chemical reactions, and industrial processes to develop industrial and consumer products. Chemical engineers are experts on separation processes such as distillation, absorption, evaporation, and filtration. Chemical engineers build rewarding careers in industries, government research agencies, and universities.

**Further Information:**

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