

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

**2 + 2 Program in Cell Biology**

Listed below are the courses offered at Mesabi Community College that apply to the Bachelor of Science degree in Cell Biology at the University of Minnesota, Duluth. After successful completion of the listed Mesabi courses, students may complete the B.S. in Cell Biology with an additional two years of full time study at UMD.

<b>Mesabi Community College Courses to Complete</b>	<b>cr</b>	<b>UMD Requirements satisfied by Mesabi courses</b>	<b>cr</b>
Biol 1551 College Biology I	5	Biol 1011 General Biology I	5
Biol 1552 College Biology II	5	Biol 1012 General Biology II	5
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	Chem 2522 Organic Chemistry II	4
Engl 1511 College Writing I	4	Comp It 20 College Writing	3
Math 1561 Calculus I	5	Math 1296 Calculus I	5
Math 1562 Calculus II	5	Math 1297 Calculus II	5
Phys 1571, 1581 Engineering Physics I & Lab	5	Phys 1201 Mechanics	4
Phys 1572, 1582 Engineering Physics II & Lab	5	Phys 1204 Electricity, Magnetism, Optics	5
Liberal Education courses	6-8	Liberal Education courses	

11/30/98

**Courses to be Completed at UMD:**

Biol 2101 Cell Biology, 3 cr  
 Biol 2201 Genetics, 3 cr  
 Biol 4501 General Microbiology, 4 cr  
 Biol 4801 Evolution, 2 cr  
 Biol 5601, 5602 Plant Physiology and Lab, 4 cr  
 Biol 5231, 5232 Molecular Biology and Lab, 5 cr

Biol 5361 Developmental Biology, 4 cr  
 Biology electives, 6 cr from approved Biol list  
 Chem 2222 Quantitative Chemistry, 4 cr  
 Chem 3324, 4363 Biochemistry and Lab, 5 cr  
 Comp 3150 Advanced Writing, 3 cr  
 Liberal Education courses

**B.S. Cell Biology:**

Cell biology is the study of the structure and function of cells. Cell biologists study the ultrastructural anatomy of cells, cell growth, cell differentiation and genetics, cell-cell communication, membrane structure and function, and cellular physiology. Students earn minors in both chemistry and biology while completing this degree. Cell Biology graduates are prepared for entry level employment as science technicians and for health science professional programs (e.g. medicine). Many will continue on to advanced degrees.

**Further Information:**

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