

Mesabi Range Community & Technical College
University of Minnesota, Duluth

2 + 2 Program in Physics/ 2 + 2 Program in Applied Physics

Listed below are the Mesabi Community College courses that apply to the Bachelor of Science in Physics and the Bachelor of Science in Applied Physics at the University of Minnesota, Duluth. After successful completion of the Mesabi courses, students may complete at UMD either the Physics or Applied Physics B.S. with an additional two years of full-time study. *

Mesabi Community College Courses to Complete	cr	UMD requirements satisfied by Mesabi courses	cr
Engl 1511 College Writing I	4	Comp 1120 College Writing	3
Csci 1466 FORTRAN Programming	3	CS 1131 FORTRAN	3
CSci 2471 "C" Language (Applied Physics)	3	CS 1211 Programming in C (Applied Physics)	3
Chem 1522 General Chemistry I	5	Chem 2172 General Chemistry	4
Chem 1523 General Chemistry II	5		
Math 1561 Calculus I	5	Math 1296 Calculus I	5
Math 1562 Calculus II	5	Math 1297 Calculus II	5
Math 2563 Calculus III	5	Math 3298 Calculus III	4
Math 2564 Diff Equations w/ Linear Algebra	5	Math 3280 Diff Equations w/ Linear Algebra	4
Phys 1571, 1581 Engineering Physics I & Lab	5	Phys 1201 Mechanics	4
Phys 1572, 1582 Engineering Physics II & Lab	5	Phys 1202 Heat and Electricity	4
		Phys 1203 Magnetism. Waves, Optics	4
Liberal Education		Liberal Education	

Courses to be Completed at UMD:

B.S. Physics

Phys 2021 Relativity & Quantum Physics, 2 cr
 Phys 2031 Quantum Lab, 1 cr
 Phys 3001 Oscillations, 2 cr
 Phys 3061 Instrumentation, 3 cr
 Phys 4001 Classical Mechanics, 4 cr
 Phys 4011 Electromagnetic Theory, 4 cr
 Phys 4021 Quantum Physics II*, 4 cr
 Phys 4031 Thermal & Statistical Physics*, 4 cr
 Phys; 5061 Experimental Methods, 3 cr
 Phys; 5090 Physics Seminar, 2 cr
 Comp 3150 Advanced Writing for Science, 3 cr
 Minor courses
 Liberal Education courses

B.S. Applied Physics

(emphasizes contemporary electronics & computing skills)

Phys 2021 Relativity & Quantum Physics, 2 cr
 Phys 2031 Quantum Lab. 1 cr
 Phys 3001 Oscillations, 2 cr
 Phys 3061 Instrumentation, 3 cr
 Phys 4021 Quantum Physics II*. 4 cr
 Phys 4031 Thermal & Statistical Physics*, 4 cr
 Phys 5041 Optics or approved alternative, 3 cr
 Phys 5061 Experimental Methods, 3 cr
 Phys 5090 Physics Seminar, 2 cr
 Phys 5531 Solid State Physics or approved alternate. 3 cr
 Phys 5541 Fluid Dynamics or approved alternate, 3 cr
 Comp 3150 Advanced Writing for Science, 3 cr
 Minor courses/Liberal Education courses

*Completion of B.S. in two years depends on availability of Phys 4021, 4031 in Senior Year. Contact Physics Dept. for information.

Bachelor of Science in Physics: Physics is the science of the properties of matter and energy and the study of the ultimate laws which govern the structure of the universe. The study of Physics provides a solid broad-based scientific preparation which enables students to grow and shift emphasis with the science and technology changes of the world today. Graduates have continued on for advanced studies in such fields as planetary science, engineering. and applied mathematics or gone directly to work in industrial or institutional laboratories.

Further Information:

Department of Physics
 University of Minnesota, Duluth
 371 Marshall W. Alworth Hall
 Duluth, Minnesota 55812
 218 726-6147
 phys@d.umn.edu

College of Science and Engineering - Student Affairs
University of Minnesota, Duluth
140 Engineering Building
Duluth, Minnesota 55812
218 726-7585
csesa@d.umn.edu