

# INTEGRATED SCIENCES, MIS

Please click here (<http://catalog.ucdenver.edu/cu-denver/graduate/schools-colleges-departments/college-liberal-arts-sciences/integrated-sciences/>) for more information on the Integrated Sciences program.

## Introduction

Students in the Integrated Sciences program have the opportunity to take courses from a variety of areas in mathematics, the natural and physical sciences (biology, chemistry, environmental sciences, geology, and physics), and computer science in an interdisciplinary STEM program designed for professional growth in their area of interest. These areas are further explored through a required project or thesis that includes focused independent research on a topic that integrates two or three of the disciplines mentioned above.

The length of time it takes to complete the degree is determined by the student's own schedule flexibility; many finish within two years of full-time work. In accordance with Graduate Education Policies and Procedures, the degree must be completed within seven years of matriculation.

These program requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with the Program Director to confirm the best plans of study before finalizing them.

Students pursuing the 4+1 track must apply and be accepted for participation in the BS/MIS program prior to completion of the BS degree in consultation with both the undergraduate and graduate advisors. Students must complete a 4+1 intent form ([http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/physics/physics-bs/BMA\\_form\\_1\\_1\\_.pdf](http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/physics/physics-bs/BMA_form_1_1_.pdf)) to formally declare this program, as they work very closely with undergraduate and graduate advisors to ensure they are on track and completing requirements as necessary. Students must apply and be accepted to the Integrated Sciences, MIS during the last semester of their undergraduate career. A maximum of 12 credit hours of graduate level courses that are applied to the undergraduate degree will apply to the graduate degree.

**Graduate Education Policies and Procedures apply to this program.**

## Program Requirements

1. Students must complete a minimum of 30 credits from approved coursework.
2. Students must complete a minimum of 24 graduate (5000 level and above) credit hours. Under exceptional circumstances and only with approval of the Program Director, a maximum of 6 credit hours may be at the 4000-level, as long as those credits have not been applied to another degree.
3. Students must earn a minimum grade of B- (2.7) in those courses applied to the degree and taken at CU Denver, and must maintain a minimum cumulative GPA of 3.0. Students cannot complete program requirements as P+/P/F or S/U.
4. All credits for the program must be completed with CU Denver faculty. The Graduate Education policies allow concurrent enrollment at CU Boulder or UCCS to be counted in residence, and allow up to 12 credit hours in transfer courses, with approval of the Program Director.

## Program Restrictions, Allowances and Recommendations

1. For students who are completing the Physics, BS 4+1 track, a maximum of 12 credit hours of graduate level courses that are applied to the undergraduate degree will apply to the graduate degree. Students must also earn a B- or higher in graduate level coursework, for it to apply to the Integrated Science, MIS.
2. Graduate education policies will allow up to 12 hours of graduate transfer credits (dependent on a B grade or better). However these credits must fit the student's program goal in order to apply to the MIS degree and be approved by the Program Director.
3. No coursework may be applied that will be older than seven years on the day of graduation. For more information please contact the Program Director.
4. Students must complete a minimum of nine credit hours in the primary concentration and a minimum of six credit hours in a secondary concentration (all 5000+ level).

## Graduate Research Advisor and Examination Committee

All candidates for the MIS degree must select a faculty research advisor and arrange for two other faculty members to serve with the research advisor as the candidate's graduate examination committee. The committee members must have graduate standing at the University of Colorado Denver and be approved by the Program Director. The name of the faculty research advisor must be submitted to the Program Director at the start of the third semester following matriculation to the program.

Code	Title	Hours
<b>Core</b>		<b>3</b>

*Take the following required course within the first year of the program.*

This course serves as an introduction to the program and helps students to develop research skills and to further their professional development.

MINS 5200	Research Methods in Interdisciplinary Science (This course is offered in the fall semester only.)
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### Concentration and Breadth Requirements <sup>1</sup> 24-27

*Students must designate one area of concentration (the primary area of study) and one or two breadth areas (the secondary and, if applicable, tertiary areas of study) within the disciplines of biology, chemistry, computer science, environmental sciences, geology, mathematics or physics. An interdisciplinary area of study (including but not limited to fields such as biochemistry, biophysics, or computational biology) may also be considered, upon approval by the Program Director.*

Students must complete a minimum of nine semester hours in the chosen area of concentration and a minimum of six semester hours in each breadth area.

In consultation with their program advisor, students will complete additional concentration/ breadth or elective courses to reach their minimum required credit hours.

Students who are admitted through the Physics, BS 4+1 track, will complete the following courses in their undergraduate career. These 12 credits will also apply to their Masters degree.

MINS 5200	Research Methods in Interdisciplinary Science
PHYS 5211	Quantum Mechanics
PHYS 5311	Electricity & Magnetism

One graduate STEM (MATH, PHYS, ELEC, BIOL, etc.) course chosen to meet the student's MIS Program Goals, in consultation with the MIS Program Director.

### Project or Thesis<sup>2</sup>

3-6

*The program provides students with two options as their capstone experience, either a project or a thesis, depending on their academic and professional goals. All students must conduct independent research integrating coursework from the disciplines in their program of study. The research is conducted as either a project (requiring 3-4 semester-hours of MINS 5960 Master's Project) or a thesis (requiring 4-6 semester-hours of MINS 5950 Master's Thesis), and is presented to their examination committee in both written and oral forms. The student must successfully defend their project/thesis in an oral examination (defense) in order to graduate. Prior to enrolling in Project or Thesis hours, all students must submit a proposal approved by three faculty members (one of whom is their graduate faculty research advisor) and the Program Director.*

MINS 5950 Master's Thesis  
or MINS 596 Master's Project

**Total Hours:**

**30**

<sup>1</sup> Credits for the Concentration and Breadth Requirements may vary based upon course selection, and student choice of Master's Thesis or Master's Project

<sup>2</sup> Students must complete either 4-6 credit hours of a Master's Thesis (MINS 5950), or 3-4 credit hours of a Master's Project (MINS 5960)

To learn more about the Student Learning Outcomes for this program, please visit our website (<https://clas.ucdenver.edu/mis/degree-information/learning-goals-and-objectives/>).