

ASTROPHYSICS (BS)

The Astrophysics program focuses on the theoretical, observational and experimental study of the Universe. Emphasis is placed on the universe on its largest scales (cosmology), its most visible constituents (stars), and on analysis of modern astronomical data sets. Undergraduates also have the opportunity to work with faculty in their research.

Program Requirements	Quarter Hours
Liberal Studies Requirements	76
Major Requirements	96
Open Electives	20
Total hours required	192

Students will be able to:

- Demonstrate critical thinking, quantitative, and mathematical skills required to answer questions about the behavior of the universe.
- Create and interpret multiple representations of astrophysics concepts through the use of mathematics, computational code, computer simulations, as well as written, graphical, and pictorial descriptions.
- Design, execute, and analyze observations to test astrophysics theories and hypotheses.
- Effectively communicate their understanding of astrophysics concepts to scientists and non-scientists.

College Core Requirements

Modern Language Requirements

Students who intend to graduate with the Bachelor of Arts (BA) degree will be required to demonstrate competence in a modern language equivalent to the proficiency attained from one year of college-level language study. Such competence may be demonstrated in one of several ways:

- completing the last course in the fourth-year high school sequence of any language
- completing the last course in the first-year college sequence of any language
- completing a college course beyond the first-year level in any language
- achieving a satisfactory score on any of the Modern Language placement examinations administered at DePaul
- achieving a satisfactory rating in a proficiency examination accepted by DePaul
- achieving a score of 3 or higher on the Advance Placement (AP) test for any language
- achieving a score of 5 or higher in the Language B assessment from a Standard or Higher Level International Baccalaureate (IB) program
- achieving a satisfactory score on the CLEP examination

Please note: Modern Languages courses with an E-designation are taught in English and may not be applied to the Modern Language Requirement.

For further information regarding satisfactory scores and possible credit from the DePaul placement, AP, CLEP, or IB examinations, please contact Student Records.

Students who complete an Inter-College Transfer (ICT) to the College of Science and Health will abide by the College of Science and Health Modern Language Requirement in place on the effective date of the ICT.

BA students who meet College requirements and wish to pursue further work in the language may elect the "Modern Language Option" of the Liberal Studies Program. While Bachelor of Science (BS) students are not required to demonstrate competency in a modern language, the "Modern Language Option" is available to them for language study at any level. Modern Languages courses with an E-designation are taught in English and may not be applied to the Modern Language Option.

Major Declaration Requirements

All students in the College are required to declare a major field prior to beginning their junior year. After researching College programs, the student should declare a major field by visiting Campus Connection and using the Declarations and Inter-College Transfer tool. The student will then be assigned a faculty advisor or staff advisor in the department or program and should make an appointment to see that advisor at his or her earliest convenience.

To change major fields, or to declare a minor or concentration, the student must use the Declarations and Inter-College Transfer tool described above. However, for the purpose of exploring the possibility of changing a major field, the student should consult an academic advisor in the College or an academic advisor in the Office for Academic Advising Support.

Liberal Studies Requirements

Honors program requirements can be found in the individual Colleges & Schools section of the University Catalog. Select the appropriate college or school, followed by Undergraduate Academics and scroll down.

First Year Program		Hours
Chicago Quarter		
LSP 110 or LSP 111	DISCOVER CHICAGO or EXPLORE CHICAGO	4
Focal Point		
LSP 112	FOCAL POINT SEMINAR	4
Writing		
WRD 103	COMPOSITION AND RHETORIC I ¹	4
WRD 104	COMPOSITION AND RHETORIC II ¹	4
Quantitative Reasoning		
Not Required		
Sophomore Year		
Race, Power, and Resistance		
LSP 200	SEMINAR ON RACE, POWER, AND RESISTANCE	4
Junior Year		
Experiential Learning		
Required		
4		
Senior Year		
Capstone		
PHY 330	SENIOR CAPSTONE PHYSICAL SCIENCE ^{1,2}	4

¹ Students must earn a C- or better in this course.

² Students with a primary major in Physics are required to complete the Capstone offered by the Physics department. Students double majoring or pursuing dual degrees with the primary major or primary degree in Physics are required to complete the Capstone offered by the Physics department. Physics students in the University Honors Program shall take the University Honors Capstone. They are not expected to take both the Honors Capstone and the primary major or primary degree Capstone.

Learning Domains

Arts and Literature (AL) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/arts-and-literature/>)

- 3 Courses Required

Historical Inquiry (HI) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/historical-inquiry/>)

- 2 Courses Required

Math and Computing (MC) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/math-and-computing/>)

- Not Required

Philosophical Inquiry (PI) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/philosophical-inquiry/>)

- 2 Courses Required

Religious Dimensions (RD) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/religious-dimensions/>)

- 2 Courses Required

Scientific Inquiry (SI) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/scientific-inquiry/>)

- Not required

Social, Cultural, and Behavioral Inquiry (SCBI) (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/social-cultural-and-behavioral-inquiry/>)

- 3 Courses Required

Notes

Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the Experiential Learning requirement.

In meeting learning domain requirements, no more than one course that is outside the student's major and is cross-listed with a course within the student's major, can be applied to count for LSP domain credit. This policy does not apply to those who are pursuing a double major or earning BFA or BM degrees.

Major Requirements

Physics

Course	Title	Quarter Hours
PHY 170	UNIVERSITY PHYSICS I	4
PHY 171	UNIVERSITY PHYSICS II	4
PHY 172	UNIVERSITY PHYSICS III	4
PHY 270	UNIVERSITY PHYSICS IV	4
PHY 300	METHODS OF COMPUTATIONAL AND THEORETICAL PHYSICS I	4
PHY 301	METHODS OF COMPUTATIONAL AND THEORETICAL PHYSICS II	4
PHY 330	SENIOR CAPSTONE PHYSICAL SCIENCE (Liberal Studies Program Capstone)	4

Mathematics

Course	Title	Quarter Hours
Select one of the following three-course Calculus sequences:		12
Sequence One		
MAT 147	CALCULUS WITH INTEGRATED PRECALCULUS I	
MAT 148	CALCULUS WITH INTEGRATED PRECALCULUS II	
MAT 149	CALCULUS WITH INTEGRATED PRECALCULUS III	
Sequence Two		
MAT 150	CALCULUS I	
MAT 151	CALCULUS II	
MAT 152	CALCULUS III	
Sequence Three		
MAT 160	CALCULUS FOR MATHEMATICS AND SCIENCE MAJORS I	
MAT 161	CALCULUS FOR MATHEMATICS AND SCIENCE MAJORS II	
MAT 162	CALCULUS FOR MATHEMATICS AND SCIENCE MAJORS III	
Additional Math Course		
MAT 260	MULTIVARIABLE CALCULUS I	4

Course	Title	Quarter Hours
PHY 310	MECHANICS I	4
PHY 320	ELECTRICITY AND MAGNETISM I	4
PHY 360	QUANTUM MECHANICS I	4
PHY 361	QUANTUM MECHANICS II	4
PHY 373	STAR FORMATION	4
PHY 374	STELLAR ASTROPHYSICS	4
PHY 375	INTRODUCTION TO COSMOLOGY	4
PHY 376	ASTRONOMICAL DATA ANALYSIS	4
PHY 380	EXPERIMENTAL PHYSICS I	4
One PHY Elective Required		4
PHY 104	THE SUN & ITS PLANETS	
PHY 114	EXPLORING OTHER WORLDS	
PHY 204	FRONTIERS OF THE UNIVERSE	

PHY 370 ELECTRONICS

For additional options, see Advisor

Course	Title	Quarter Hours
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MAT 261	MULTIVARIABLE CALCULUS II	4
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Select one year-long sequence of courses in biology, chemistry, mathematics, or computer science from the following sequences:

Biology Sequence

BIO 191	GENERAL BIOLOGY I FOR SCIENCE MAJORS
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BIO 192	GENERAL BIOLOGY II FOR SCIENCE MAJORS
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BIO 193	GENERAL BIOLOGY III FOR SCIENCE MAJORS
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Chemistry Sequence

CHE 130 & CHE 131	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY
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CHE 132 & CHE 133	GENERAL CHEMISTRY II and GENERAL CHEMISTRY LABORATORY II
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CHE 134 & CHE 135	GENERAL CHEMISTRY III and GENERAL CHEMISTRY LABORATORY III
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Mathematics Sequence: Select three 300-level sequenced courses as approved by departmental advisor

Computer Science Sequence: Select any one year-long three-course sequence of CSC courses as approved by departmental faculty advisor

Open Electives

Open elective credit also is required to meet the minimum graduation requirement of 192 hours.

Students are advised to talk with their advisor before double majoring, because some major combinations are prohibited. No more than 50% of the credits that apply to one major may be drawn from another major.