



# DEGREE WORKSHEET FOR:

## BS Physics, Astronomy Emphasis

### 2020-2021 Catalog

### Degree Requirements – 120 credits

YEAR 1- FALL (14 credits)		YEAR 1- SPRING (15 credits)	
PHYS 240 General Physics I (LAC Area 6)	5 credits	PHYS 241 General Physics II	5 credits
MATH 131 <sup>1</sup> Calculus I (LAC Area 2)	4 credits	MATH 132 <sup>1</sup> Calculus II (LAC Area 2)	4 credits
CHEM 111 Principles of Chemistry I (LAC Area 6)	4 credits	ENG 122 College Composition (LAC Area 1)	3 credits
CHEM 111L Principles of Chemistry I Lab (LAC Area 6)	1 credit	Liberal Arts Core <sup>2</sup> /Electives	3 credits
YEAR 2- FALL (16 credits)		YEAR 2-SPRING (16 credits)	
PHYS 320 Mathematical Methods I	3 credits	PHYS 321 Elementary Modern Physics	4 credits
MATH 233 Calculus III	4 credits	PHYS 420 Mathematical Methods II	3 credits
AST 301 Classical Astronomy and Solar System	3 credits	AST 302 Stars and the Milky Way	3 credits
Liberal Arts Core <sup>2</sup> /Electives	6 credits	Liberal Arts Core <sup>2</sup> /Electives	6 credits
<sup>3</sup> For students beginning their 3 <sup>rd</sup> year in odd years (2021, 2023, etc.)			
YEAR 3- FALL (14 credits)		YEAR 3- SPRING (16 credits)	
PHYS 340 Mechanics	4 credits	PHYS 301 Seminar in Physics	1 credit
PHYS 347 Optics	4 credits	PHYS 341 Electricity and Magnetism	4 credits
CS 120 Computer Programming	3 credits	Liberal Arts Core <sup>2</sup> /Electives	11 credits
AST 303 Galaxy Formation and Cosmology	3 credits		
YEAR 4- FALL (13-15 credits)		YEAR 4- SPRING (16-18 credits)	
PHYS 345 Quantum Mechanics I	3 credits	PHYS 445 Quantum Mechanics II	3 credits
PHYS 360 Laboratory Physics I	2 credits	PHYS 448 Nuclear and Particle Physics	4 credits
PHYS 370 <sup>4</sup> Research I	1-3 credits	PHYS 460 Laboratory Physics II	2 credits
PHYS 440 Thermodynamics and Statistical Mechanics	4 credits	PHYS 470 <sup>5</sup> Research II	1-3 credits
Liberal Arts Core <sup>2</sup> /Electives	3 credits	Liberal Arts Core <sup>2</sup> /Electives	6 credits
<sup>3</sup> For students beginning their 3 <sup>rd</sup> year in even years (2020, 2022, etc.)			
YEAR 3- FALL (16 credits)		YEAR 3- SPRING (14 credits)	
PHYS 340 Mechanics	4 credits	PHYS 301 Seminar in Physics	1 credit
PHYS 360 Laboratory Physics I	2 credits	PHYS 341 Electricity and Magnetism	4 credits
PHYS 440 Thermodynamics and Statistical Mechanics	4 credits	PHYS 448 Nuclear and Particle Physics	4 credits
CS 120 Computer Programming	3 credits	PHYS 460 Laboratory Physics II	2 credits
Liberal Arts Core <sup>2</sup> /Electives	3 credits	Liberal Arts Core <sup>2</sup> /Electives	3 credits
YEAR 4- FALL (14-16 credits)		YEAR 4- SPRING (15-17 credits)	
PHYS 345 Quantum Mechanics I	3 credits	PHYS 445 Quantum Mechanics II	3 credits
PHYS 347 Optics	4 credits	PHYS 470 <sup>5</sup> Research II	1-3 credits
PHYS 370 <sup>4</sup> Research I	1-3 credits	Liberal Arts Core <sup>2</sup> /Electives	11 credits
AST 303 Galaxy Formation and Cosmology	3 credits		
Liberal Arts Core <sup>2</sup> /Electives	3 credits		

This four-year plan is a recommended schedule to complete your bachelor's degree in 4 years. Every UNC student must meet the following requirements in order to graduate with a bachelor's degree: earn a minimum of 120 semester credit hours; possess a minimum of a 2.00 cumulative grade point average; have at least 40 credit hours in courses designated as Liberal Arts Core; meet all degree requirements in the student's major field of study. Each major and/or emphasis may have additional requirements necessary for graduation. **Students must consult with their major advisor to receive information on any additional graduation requirements.**

**Admission Requirement – No separate admission requirement.**

**Minor Required – No Minor required.**

**Contact Information –Department of Physics and Astronomy**

**Ross Hall Room 0232, 970-351-2961**

**Program Web Page:** <https://www.unco.edu/nhs/physics-astronomy/>

## **Notes**

<sup>1</sup>Students who need further preparation in mathematics may need to start in MATH 124 (4) -- College Algebra or MATH 127 (4)--Elementary Functions. Please consult your major advisor.

<sup>2</sup>To satisfy the Liberal Arts Core requirements using this plan, students need to select courses from Area 7 and/or 8 that also count for Areas 3, 4, or 5.

<sup>3</sup>Since some of the major courses are offered every other year, two plans are provided -- one for the student's 3rd year commencing in an even year and one for it commencing in an odd year. If a student starts the physics major in 2020-2021 and stays on track, their 3<sup>rd</sup> year would begin in 2022, an even year.

<sup>4</sup>Students must select a senior research topic and have it approved by their major advisor in order to register for their final year of classes.

<sup>5</sup>HON 451 may be substituted for PHYS 470.

A minimum 2.0 cumulative grade point average is required in PHYS prefix courses for graduation.