



PHYSICS MAJOR – Concentration in Astronomy (PHAS)
PROGRAM EFFECTIVE: FALL 2004
BACHELOR OF SCIENCE DEGREE REQUIREMENTS

I. MAJOR REQUIREMENTS (72 Credits)

A. Required Physics Courses (24 Credits)

- PHYS 191 University Physics I (4)
PHYS 192 University Physics II (4)
PHYS 210 Mechanics (4)
PHYS 240 Electricity and Magnetism (4)
PHYS 350 Optics (4)
PHYS 460 Modern Physics (4)

B. Required Concentration Courses - Choose a minimum of 14 credit hours from the list below.

- PHYS 280 Astronomy (4)
PHYS 380 Observational Astronomy (4)
PHYS 480 Astrophysics (3)
PHYS 495 Laboratory Research in Physics (3)

C. COLLATERAL COURSES. Complete the following: (34 Credits)

- MATH 122 Calculus I (4)
MATH 221 Calculus II (4)
MATH 222 Calculus III (4)
MATH 420 Differential Equations (4)
STAT 401 Applied Statistics for the Sciences (3)
CMPT 183 Foundations Of Computer Science I (3)
CHEM 120 General Chemistry I (4)
CHEM 121 General Chemistry II (4)
GEOS 107 Planet Earth (4)

III. GENERAL EDUCATION REQUIREMENTS 44 - 47 SEMESTER HOURS

IV. FREE ELECTIVE CREDITS 1 - 4 SEMESTER HOURS

MINIMUM TOTAL FOR GRADUATION 120 SEMESTER HOURS

Physics Major – Concentration in Astronomy (PHAS)  
Curriculum Effective Fall 2004  
Bachelor of Science Degree Requirements

III. GENERAL EDUCATION REQUIREMENTS (44-47 Credits)

Core:

- A. New Student Seminar (1) ..... (MATH 102)
- B. Interdisciplinary Core
  - B1. Contemporary Issues I: Scientific Issues (3) ..... (GNED 201)
  - B2. Contemporary Issues II: National Issues (3) ... (GNED 202)
  - B3. Contemporary Issues III: Global Issues (3) ..... (GNED 301)

Distribution:

- C. Communication
  - C1. Writing/Literature (6)..... \_\_\_\_\_
  - C2. Communication (3) ..... \_\_\_\_\_
- D. Fine and Performing Arts(3) ..... \_\_\_\_\_
- E. World Languages(3-6) ..... \_\_\_\_\_
- F. Humanities
  - F1. World Literature or General Humanities(3) .. \_\_\_\_\_
  - F2. Philosophy/Religion(3)..... \_\_\_\_\_
- G. Computer Science (0-credit included in major) ..... (CMPT 183)
- H. Mathematics (0-credit included in major)..... (MATH 122,221)
- I. Natural/Physical Science (0-credit included in major)..... (PHYS 191)
- J. Physical Education (1) ..... \_\_\_\_\_
- K. Social Science
  - K1. American or European History(3)..... \_\_\_\_\_
  - K2. Non-Western Cultures(3)..... \_\_\_\_\_
  - K3 Social Science(3) .... \_\_\_\_\_
- L. General Education Elective(3) ..... \_\_\_\_\_

IV. FREE ELECTIVES (1 - 4)

- A..... \_\_\_\_\_
- B..... \_\_\_\_\_

Requirements for Graduation Include:

Physics Courses: 24 Specified plus 14 Electives	38
Collateral Courses	34
General Education Requirements	44 - 47
Free Electives	1 - 4
<b>TOTAL SEMESTER HOUR CREDIT REQUIRED</b>	<b>120</b>

Suggested course sequence for Freshman and Sophomores assuming exemption from all basic skills requirements as a result of meeting or exceeding the required scores of the MSU Basic Skills Placement Test.

<b>First Year - Fall</b>	Credits	
ENWR 105 College Writing I: Intellectual Prose	3	
MATH 122 Calculus I	4	
PHYS 191 University Physics I	4	
General Education Courses	3-6	
MATH 102 New Student Experience for Mathematical Sciences	1	
		15-18

<b>First Year - Spring</b>	Credits	
ENWR 106 College Writing II: Writing & Literary Study	3	
CMPT 183 Found. of Computer Science	3	
MATH 221 Calculus II	4	
PHYS 192 University Physics II	4	
General Education Course	3	
could be continuation of a foreign language		
		17

<b>Second Year - Fall</b>	Credits	
GNEED 201 Contemporary Issues I: Scientific Issues	3	
CHEM 120 General Chemistry I	4	
MATH 222 Calculus III	4	
PHYS 210 Mechanics	4	
Physical Education	1	
		16

<b>Second Year - Spring</b>	Credits	
GNEED 202 Contemporary Issues II: National Issues	3	
CHEM 121 General Chemistry II	4	
MATH 420 Differential Equations	4	
PHYS 240 Electricity and Magnetism	4	
Electives	0-3	
		15-18

## NOTES

THIS WORKSHEET, THE COLLEGE CATALOG AND THE SEMESTER SCHEDULE BOOKS CONTAIN THE IMPORTANT ADVISING AND ACADEMIC INFORMATION NECESSARY FOR AN ACCURATE UNDERSTANDING OF THE DEGREE REQUIREMENTS. STUDENTS WITH QUESTIONS ARE URGED TO CONSULT THE DEPARTMENT COORDINATOR OF UNDERGRADUATE ADVISING.

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**FAILURE TO BE AWARE OF AND FOLLOW COLLEGE ACADEMIC AND ADMINISTRATIVE POLICIES AS OUTLINED HERE AND IN THE COLLEGE CATALOG AND SEMESTER SCHEDULE BOOKS MAY RESULT IN LOSS OF CREDIT AND/OR DELAYED GRADUATION.**

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RESTRICTIONS - The following courses MAY NOT BE TAKEN FOR GRADUATION CREDIT BY MATHEMATICS AND COMPUTER SCIENCE MAJORS: CMPT 107, CMPT 108, CMPT 273, MATH 103, MATH 109, MATH 100, MATH 113, MATH 114, MATH 116, MATH 117, MATH 118, MATH 270, BSED 273, FINQ 270, MGMT 273.

PASS/FAIL LIMITATIONS - Those courses which meet the major, collateral, teacher certification or general education requirements may not be taken pass/fail.

MINORITIES CULTURE REQUIREMENT - All students are required to take one course which satisfies the college minorities culture requirement. Refer to the current college catalog for a complete listing of acceptable courses.

PREREQUISITES - It is the student's responsibility to ensure that courses are taken in the academically correct order. A current list of prerequisites for these and other courses may be found in the current college catalog or through the office of the offering department.

BASIC SKILLS - Students placed into basic skills courses as a result of the MSU Basic Skills Placement Test are required to enroll in those courses the first semester and continue in sequence each semester until required work is completed. All basic skills course work is counted in the cumulative grade-point-average, but only ENGL 100 "Basic Composition" may be used toward the 128 credit degree requirement.

FINAL EVALUATION - Students who are eligible for graduation must file an "Application for Final Evaluation" with the Registrar according to the following schedule: October 1 for May graduation, March 1 for August graduation, June 1 for January graduation.

RESIDENCY REQUIREMENTS - A minimum of 32 credits must be taken at MSU. This must include at least 18 credits of mathematics or computer science courses in the major, of which at least 12 credits must be at the junior (300-399) or senior level (400-499). The last 24 credits must be taken in consecutive residence at MSU

FREE ELECTIVES - Free electives are defined as credits not applicable to general education or major requirements. The exact number of free electives required by an individual student is dependent upon the collateral sequence chosen in the major (see p.1, and worksheet p. 2).

\*IN ALL CASES, THE MINIMUM NUMBER OF CREDITS REQUIRED TO GRADUATE IS 120 \*