



PHYSICS MAJOR (PHYS) , PROGRAM EFFECTIVE: FALL 2004
BACHELOR OF SCIENCE DEGREE REQUIREMENTS

I. MAJOR REQUIREMENTS (38 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. Elective Physics Courses - Choose a minimum of 14 credit hours from the list below.

- PHYS 242 Circuit Theory (3)
PHYS 245 Electronics and Digital Circuits (3)
PHYS 247 Microprocessors and Applications (3)
PHYS 280 Astronomy (4)
PHYS 310 Advanced Mechanics (3)
PHYS 320 Thermodynamics (3)
PHYS 340 Adv. Electricity and Magnetism (3)
PHYS 377 Mathematical Physics (3)
PHYS 380 Observational Astronomy (4)
PHYS 410 Fluid Mechanics (3)
PHYS 430 Computer Simulations of Physical Systems (3)
PHYS 462 Nuclear Physics (4)
PHYS 464 Quantum Mechanics (3)
PHYS 470 Solid State Physics (3)
PHYS 480 Astrophysics (3)
PHYS 490 Literature Research in Physics (2)
PHYS 495 Laboratory Research in Physics (1-4)
GEOS 112 Physical Geology (4)

II. COLLATERAL COURSES. Complete the following: (27 Credits)

- MATH 122 Calculus I (4)
MATH 221 Calculus II (4)
MATH 222 Calculus III (4)
MATH 420 Differential Equations (4)
CMPT 183 Foundations Of Computer Science I (3)
CHEM 120 General Chemistry I (4)
CHEM 121 General Chemistry II (4)

III. GENERAL EDUCATION REQUIREMENTS

44-47 SEMESTER HOURS

IV. FREE ELECTIVE CREDITS

8-11 SEMESTER HOURS

MINIMUM TOTAL FOR GRADUATION 120 SEMESTER HOURS

Physics Major (PHYS)
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 303)

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 (8-11)

- A..... _____
- B..... _____
- C..... _____
- D..... _____
- E..... _____
- F..... _____

Requirements for Graduation Include:

Physics Courses: 24 Specified plus 14 Electives	38
Collateral Courses	27
General Education Requirements	44-47
Free Electives	8-11
TOTAL SEMESTER HOUR CREDIT REQUIRED	120

Suggested course sequence for Freshmen 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.

First Year - Fall	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

First Year - Spring	
ENWR 106 College Writing II: Writing and 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

Second Year - Fall	
GNEC 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

Second Year - Spring	
GNEC 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 MONTCLAIR STATE UNIVERSITY UNDERGRADUATE CATALOG, AND THE SEMESTER SCHEDULE OF COURSES BOOKLETS 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.

FAILURE TO BE AWARE OF AND FOLLOW UNIVERSITY ACADEMIC AND ADMINISTRATIVE POLICIES AS OUTLINED HERE AND IN THE UNIVERSITY UNDERGRADUATE CATALOG AND SEMESTER SCHEDULE OF COURSES BOOKLETS MAY RESULT IN LOSS OF CREDIT AND/OR DELAYED GRADUATION.

RESTRICTIONS - The following courses MAY NOT BE TAKEN FOR GRADUATION CREDIT BY MATHEMATICS MAJORS: MATH 100, MATH 103, MATH 106, MATH 109, MATH 113, MATH 114, MATH 116, MATH 270, INFO 270, MGMT 273.

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

MULTICULTURAL AWARENESS REQUIREMENT - All students are required to take one course that satisfies the university multicultural awareness requirement. Refer to the current university undergraduate 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 university undergraduate 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 120 credits degree requirement.

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

RESIDENCE REQUIREMENTS - A minimum of 32 credits must be taken at MSU. This must include at least 18 credits of Physics 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 at MSU and cannot be acquired through transfer.

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 *