Montclair State University
Department of Mathematical Sciences
BS Physics w/Concentration in Astronomy

I. Major Requirements	38 sh
A. Physics Core	**(24 sh)**
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. Physics Electives	**(14 sh)**
Select a minimum of 14 sh from the list below	
PHYS 280 Astronomy	4
PHYS 380 Observational Astronomy	4
PHYS 480 Astrophysics	3
PHYS 495 Laboratory Research in Physics	3

II. Collateral Requirements	34 sh
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 Sciences	3
CSIT 111 Fundamentals of Programing I	3
CHEM 120 General Chemistry I	4
CHEM 121 General Chemistry II	4
EAES 101 Planet Earth	4

III. GenEd Requirement		29 sh
A. New Student Experience	*MATH 102*	1
C. Communications		9
ENWR 105 College Writing I		
ENWR 106 College Writing II		
CMST 101 Fundamentals of Speech		
D. Fine and Performing Arts		3
F. Humanities		6
F1. World Literature/General Humanities		
F2. Philosophy/Religion		
G. Fund. of Programming I	*CSIT 111*	*(0)*
H. Math	*MATH 122, 221*	*(0)*
I. Natural/Physical Science	*PHYS 191*	*(0)*
J. Physical Education		1
K. Social Science		9
American/European History		
Non-Western Culture		
Social Science		
L. Gen Ed Elective	*CHEM 120*	*(0)*

IV. World Languages and Cultures Requirement	3-9 sh
A. World Languages	3-6
B. World Cultures	0-3

VI. Free Electives	10-16 sh

Minimum total required for graduation	**120 sh**

Suggested Sequence for Four-Year Plan

The following sequence assumes exemption from all basic skills requirements as a result of meeting or exceeding the required scores on the MSU Basic Skills Placement Test.

First Year

Fall	Spring
PHYS 191 University Physics I (4) ENWR 105 College Writing I (3) MATH 122 Calculus I (4) CSIT 111 Fundamentals of Programming I (3) MATH 102 New Student Experience (1) Total: 15	PHYS 192 University Physics II (4) ENWR 106 College Writing II (3) MATH 221 Calculus II (4) CMST 101 Fundamentals of Speech (3) Physical Education Requirement (1) Total: 15

Second Year

0

Fall	Spring
PHYS 210 Mechanics (4) MATH 222 Calculus III (4) CHEM 120 General Chemistry I (4) General Education course (3) Total: 15	PHYS 240 Electricity and Magnetism (4) MATH 420 Differential Equations (4) CHEM 121 General Chemistry II (4) World Cultures/Free Elective (3) Total: 15

Third Year

Fall	Spring
PHYS 350 Optics (4) Physics 280 Astronomy (4) Language requirement (3) General Education Course (6) Total: 17	PHYS 460 Modern Physics (4) Physics 380 Observational Astronomy (4) Language requirement (3) General Education Course (3) Free Elective (3) Total: 17

Fourth Year

Fall	Spring
Physics 480 Astrophysics (3) General Education Course (3) Free Elective (3) EAES 101 Planet Earch (4) Total: 13	Physics 495 Laboratory Research in Physics (3) General Education Course (3) Free Elective (4) Stat 401 Appl Statistics for Sciences (3) Total: 13

Note: The work plan assumes that the student will take a 2 semester foreign language sequence (6 sh) for undergraduate requirement IV. Also, the World Cultures 3 sh can be counted as part of GenEd requirement III.

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.

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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.
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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 *