

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Norbert Mulders _____ phone number __X3517_____

Department: Physics and Astronomy _____ email address mulders@udel.edu

Date: 08/24/201 _____

Action: _____ **Revision major** _____ **(Physics)** _____
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term _____ **14F** _____
(use format 04F, 05W)

Current degree _____ **BS** _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: _____ **BS** _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: _____
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____ **Physics Astronomy/Astrophysics** _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study: _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through

the Course Challenge list. If there are no new courses enter "None")

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www2.udel.edu/gened/>

N/A

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter "None")

Math department, students currently taking MATH341 will take MATH351

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

Because MATH341 and MATH351 are nearly identical, the math department has stopped teaching MATH341. MATH351 replaces MATH341.

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

The only revision is a change from MATH341 to MATH351

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____ Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs

Current

DEGREE: BACHELOR OF SCIENCE
MAJOR: PHYSICS
Concentration: Astronomy/Astrophysics

CURRICULUM	CREDITS
UNIVERSITY REQUIREMENTS	
ENGL 110 Critical Reading and Writing (minimum grade C-)	3
First Year Experience (FYE)	0-4
University Breadth Requirement (minimum grade C-)	12
Discovery Learning Experience (DLE)	3
Multi-cultural Course	3
COLLEGE REQUIREMENTS	
Writing: (minimum grade C-)	3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are normally designated in the semester's Registration Booklet. (See list of courses approved for second writing requirement .)	
College of Arts and Sciences Breadth Requirements : (minimum grade C-)	
The College Breadth Requirements are in addition to the University Breadth Requirement. Up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy these College of Arts and Sciences Breadth Requirements.	
A total of eighteen credits from Groups A, B and C is required with a minimum of six credits in each group. The six credits from each group could be from the same area.	
	18
Group A: Creative Arts and Humanities	
Group B: History and Cultural Change.	
Group C: Social and Behavioral Sciences	
MAJOR REQUIREMENTS	
Within the Department	
All 200-level PHYS courses used to satisfy prerequisite or graduation requirements must be passed with a minimum grade of C-.	
PHYS 169 Perspectives: Physics and Astronomy	1
PHYS 207/PHYS 208 Fundamentals of Physics I and II	8
PHYS 211 Oscillations and Waves	3
PHYS 309 20th/21st Century Physics	3
PHYS 310 Introduction to Thermal Physics	3
PHYS 311 Aspects of Modern Physics	3
PHYS 313 Physical Optics	4
PHYS 419 Classical Mechanics I	3
PHYS 424 Quantum Mechanics	3
PHYS 603 Electricity and Magnetism I	3
Additional credits of Physics at or above the 400 level	12

Proposed

DEGREE: BACHELOR OF SCIENCE
MAJOR: PHYSICS
Concentration: Astronomy/Astrophysics

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Additional credits of Physics at or above the 400 level	12

[MATH 241/MATH 242/MATH 243](#) Analytic Geometry and Calculus A, B and C 12

One of the following: 6

[MATH 302/MATH 349](#) Ordinary Differential Equations and Elementary Linear Algebra

[MATH 341/MATH 342](#) Differential Equations with Linear Algebra

[CHEM 103](#) General Chemistry 4
[CISC 106](#) General Computer Science of Engineers 3

Foreign Language or Computer Science: 0-12
Completion of the intermediate-level course (107 or 112) in a given foreign language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

Or,

Completion of the following Computer Science sequence:

[CISC 106](#) General Computer Science for Engineers 3

[CISC 181](#) Introduction to Computer Science II 3

[CISC 220](#) Data Structures 3

Additional credits of Computer Science at or above the 260 level 3

ELECTIVES

After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.

CREDITS TO TOTAL A MINIMUM OF 124

[MATH 241/MATH 242/MATH 243](#) Analytic Geometry and Calculus A, B and C 12

One of the following: 6

[MATH 302/MATH 349](#) Ordinary Differential Equations and Elementary Linear Algebra

[MATH 351/MATH 342](#) Differential Equations with Linear Algebra

[CHEM 103](#) General Chemistry 4
[CISC 106](#) General Computer Science of Engineers 3

Foreign Language or Computer Science: 0-12
Completion of the intermediate-level course (107 or 112) in a given foreign language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.

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**Norbert Mulders** <mulders@udel.edu>

replacing MATH341 by MATH351

4 messages

Norbert Mulders <mulders@udel.edu>

Mon, Oct 7, 2013 at 2:21 PM

To: John Pelesko <pelesko@udel.edu>

John,

now that it has been decided that since MATH341 and MATH351 are so similar that there is no need to teach both, and that only MATH351 will be continued, I will have to make some revisions to the physics undergraduate programs. Our BS programs require that students take either MATH302&349 or MATH341&342. we intend to replace the latter by MATH351&342. Could you confirm that the Math Department can accommodate physics majors in MATH351 if they so desire?

Norbert Mulders
Physics and Astronomy

John A. Pelesko <pelesko@math.udel.edu>

Mon, Oct 7, 2013 at 4:25 PM

To: Norbert Mulders <mulders@udel.edu>

Hi Norbert,

I don't think it will be a problem, but can you give me a rough estimate of the number of potential students?

Thanks,

John

[Quoted text hidden]

--

John A. Pelesko
Professor and Chair
Department of Mathematical Sciences
University of Delaware

Norbert Mulders <mulders@udel.edu>

Mon, Oct 7, 2013 at 5:29 PM

To: "John A. Pelesko" <pelesko@math.udel.edu>

John,

about a dozen student, spread over spring and fall.

Norbert

[Quoted text hidden]

John A Pelesko <pelesko@math.udel.edu>

Mon, Oct 7, 2013 at 5:32 PM

To: Norbert Mulders <mulders@udel.edu>

Hi Norbert,

Yes, we can accommodate them. Thanks for checking with us.

Best,

John

John A. Pelesko, Ph.D.
Professor and Chair
Department of Mathematical Sciences
University of Delaware

[Quoted text hidden]

Checklist for Curriculum Proposals

. 1. Are all **signatures on the hard copy of the proposal**?

. 2. Is the **effective date** correct?

. 3. Is the **rationale** for the proposal consistent with the changes proposed?

. 4. Does the proposed **number of credits** match the stated number?

. 5. Have affected units been identified and contacted? Are required **support letters** attached?

. 6. Is a **resolution** necessary? If so, is it attached?

(Necessary for: establishing a major; disestablishing a major; a name change to any program with permanent status; a name change to a department or college; a transfer or creation of any department; request for permanent status).

. 7. Are all **courses (required or referenced)** in the UDSIS Inventory or in the approval process?

. 8. Are all **university requirements** correctly specified?

. A. Breadth requirements.

. B. Multicultural requirement.

. C. Writing requirement.

. D. DLE requirement.

. 9. Are all **college requirements** correctly specified?

. 9. Is a **side-by-side comparison** provided?