

LSC Use Only No: LSC Action-Date: UWUCC USE Only No. UWUCC Action-Date: Senate Action Date:
 09-110 08-440 R-9/11/09 W-1/26/10

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person Stanley Sobolewski	Email Address sobolews@iup.edu
Proposing Department/Unit Physics	Phone 7-4590 or 7-2370

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply) <input type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change	
<u>Current Course prefix, number and full title</u>	<u>Proposed course prefix, number and full title, if changing</u>
2. Additional Course Designations: check if appropriate <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course.	
3. Program Proposals <input type="checkbox"/> New Degree Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Other <input type="checkbox"/> New Minor Program <input type="checkbox"/> New Track <input checked="" type="checkbox"/> Program Revision	
<u>Current program name</u>	<u>Proposed program name, if changing</u>
Bachelor of Science – Applied Physics	
4. Approvals	
Department Curriculum Committee Chair(s)	<i>S. Sobolewski</i> 9/8/08
Department Chair(s)	<i>[Signature]</i> 9/8/08
College Curriculum Committee Chair	<i>[Signature]</i> 09/29/08
College Dean	<i>[Signature]</i> 2/20/09
Director of Liberal Studies *	<i>[Signature]</i> 1/21/09
Director of Honors College *	
Provost *	<i>[Signature]</i> 3/10/09
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs	

Received
 FEB 23 2009
 Liberal Studies

Part I. **Curriculum Proposal Cover Sheet (see above)**
 Part II. **Description of Curriculum Change**

1. Catalog description for the revised program in the appropriate form. This includes both the description about the program and the list of courses and credits for the revised program.

Liberal Studies: As outlined in Liberal Studies section with the following specifications: 48
Mathematics: MATH 125
Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track)
Liberal Studies Electives: 3cr, MATH 126, no courses with PHYS prefix

Major: 28

Required Courses:

PHYS 131	Physics I-C Lecture	3cr
PHYS 132	Physics II-C Lecture	3cr
PHYS 141	Physics I-C Lab	1cr
PHYS 142	Physics II-C Lab	1cr
PHYS 222	Mechanics I	2cr
PHYS 231	Electronics	4cr
PHYS 322	Electricity and Magnetism I	2cr
PHYS 331	Modern Physics	3cr
PHYS 345	Optics	3cr
PHYS 352	Applied Physics Laboratory	3cr
PHYS 355	Computer Interfacing	3cr

Controlled Electives: According to Track 23-27

Solid State Electronics Track: COSC 300, MATH 342, PHYS 323, 342, 353, 432, 475, 476 24cr

Computer Science Track: COSC 300, 310, 410, 450, PHYS 342, 353, 432, 475, 476 27cr

Chemistry Track: CHEM 231, 232, 323, 341, 342, 343, MATH 342 24cr

Biology Track: BIOL 111, 120, CHEM 231, 323, 351 27cr

Two biology electives from the following: BIOL 250, 263, 350, 401, 472

Geology Track: GEOS 121, 122, 131, 132 23cr

Five Geoscience electives from the following:

GEOS 220, 325, 326, 362, 412, 440, 481

Other Requirements: 12-18

COSC 110	Problem Solving and Structured Programming	3cr
COSC 250	Introduction to Numerical Methods	3cr
MATH 241	Differential Equations	3cr
MATH 225	Calculus 3	3cr
Foreign Language Intermediate Level (1, 2)		0-6cr

Free Electives: 0-9

Total Degree Requirements: 120

- (1) Intermediate-level Foreign Language may be included in Liberal Studies electives.
- (2) 6cr of computer language may substitute for the foreign language requirement: COSC 110 and 210 or higher-level computer science courses (COSC 250 recommended), with department permission.

The description of the program will remain the same; Three courses will be replaced by three different courses. Two new courses will be added.

MATH 125 (3 hrs) will replace MATH 123 (4 hrs)

MATH 126 (3 hrs) will replace MATH 124 (4 hrs)

MATH 225 (3 hrs) will be added

2. Summary of changes: a. Table comparing old and new programs

Liberal Studies: As outlined in Liberal Studies section with the following specifications: Mathematics: 3 Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track) Liberal Studies Electives: 4cr, MATH 126, no courses with PHYS prefix	50	Liberal Studies: As outlined in Liberal Studies section with the following specifications: Mathematics: MATH 125 Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track) Liberal Studies Electives: 3cr, MATH 126, no courses with PHYS prefix	48
Major:	28	Major:	28
Required Courses:		Required Courses:	
PHYS 131 Physics I-C Lecture	3cr	PHYS 131 Physics I-C Lecture	3cr
PHYS 132 Physics II-C Lecture	3cr	PHYS 132 Physics II-C Lecture	3cr
PHYS 141 Physics I-C Lab	1cr	PHYS 141 Physics I-C Lab	1cr
PHYS 142 Physics II-C Lab	1cr	PHYS 142 Physics II-C Lab	1cr
PHYS 222 Mechanics I	2cr	PHYS 222 Mechanics I	2cr
PHYS 231 Electronics	4cr	PHYS 231 Electronics	4cr
PHYS 322 Electricity and Magnetism I	2cr	PHYS 322 Electricity and Magnetism I	2cr
PHYS 331 Modern Physics	3cr	PHYS 331 Modern Physics	3cr
PHYS 345 Optics	3cr	PHYS 345 Optics	3cr
PHYS 352 Applied Physics Laboratory	3cr	PHYS 352 Applied Physics Laboratory	3cr
PHYS 355 Computer Interfacing	3cr	PHYS 355 Computer Interfacing	3cr
Controlled Electives: According to Track	23-27	Controlled Electives: According to Track	23-27
<i>Solid State Electronics Track:</i> COSC 300, MATH 342, PHYS 323, 342, 353, 432, 475, 476	24cr	<i>Solid State Electronics Track:</i> COSC 300, MATH 342, PHYS 323, 342, 353, 432, 475, 476	24cr
<i>Computer Science Track:</i> COSC 300, 310, 410, 450, PHYS 342, 353, 432, 475, 476	27cr	<i>Computer Science Track:</i> COSC 300, 310, 410, 450, PHYS 342, 353, 432, 475, 476	27cr
<i>Chemistry Track:</i> CHEM 231, 232, 323, 341, 342, 343, MATH 342	24cr	<i>Chemistry Track:</i> CHEM 231, 232, 323, 341, 342, 343, MATH 342	24cr
<i>Biology Track:</i> BIOL 111, 120, CHEM 231, 323, 351 Two biology electives from the following: BIOL 250, 263, 350, 401, 472	27cr	<i>Biology Track:</i> BIOL 111, 120, CHEM 231, 323, 351 Two biology electives from the following: BIOL 250, 263, 350, 401, 472	27cr
<i>Geology Track:</i> GEOS 121, 122, 131, 132 Five Geoscience electives from the following: GEOS 220, 325, 326, 362, 412, 440, 481	23cr	<i>Geology Track:</i> GEOS 121, 122, 131, 132 Five Geoscience electives from the following: GEOS 220, 325, 326, 362, 412, 440, 481	23cr
Other Requirements:	9-15	Other Requirements:	12-18
COSC 110 Problem Solving and Structured Programming	3cr	COSC 110 Problem Solving and Structured Programming	3cr
COSC 250 Introduction to Numerical Methods	3cr	COSC 250 Introduction to Numerical Methods	3cr
MATH 241 Differential Equations	3cr	MATH 241 Differential Equations	3cr
		MATH 225 Calculus 3	3cr
Foreign Language Intermediate Level (1, 2)	0-6cr	Foreign Language Intermediate Level (1, 2)	0-6cr
Free Electives:	0-10	Free Electives:	0-9
Total Degree Requirements:	120	Total Degree Requirements:	120
(1) Intermediate-level Foreign Language may be included in Liberal Studies electives. (2) 6cr of computer language may substitute for the foreign language requirement: COSC 110 and 210 or higher-level computer science courses (COSC 250 recommended), with department permission.		(1) Intermediate-level Foreign Language may be included in Liberal Studies electives. (2) 6cr of computer language may substitute for the foreign language requirement: COSC 110 and 210 or higher-level computer science courses (COSC 250 recommended), with department permission.	

- b. List of all associated course changes (new or revised courses, number, title, or description changes, and deletions).

The Mathematics Department is going to eliminate MATH 123 and MATH 124, and replace them with MATH 125, MATH 126 and MATH 127. These courses will be added to the BS in Physics Program.

Rationale for Change.

Necessary due to changes in the calculus program.

Part III. Implementation. Provide answers to the following questions:

1. How will the proposed revision affect students already in the existing program?

Students in the program now will be able to opt for the original MATH 124-125 sequence, or take the new MATH 126-127-128 sequence.

2. Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty.

The change in the Mathematics sequence has been approved, and any impact on faculty resources has been examined by the Mathematics Department.

3. Are other resources adequate? (Space, equipment, supplies, travel funds)

Yes.

3. Do you expect an increase or decrease in the number of students as a result of these revisions? If so, how will the department adjust?

Since one biology course will be exchanged for another, there will no change in the number of Physics Education students enrolled in biology courses.

Part IV. Periodic Assessment

Departments are responsible for an on-going review of curriculum. Include information about the department's plan for program evaluation:

1. Describe the evaluation plan. Include evaluation criteria. Specify how student input will be incorporated into the evaluation process.

2. Specify the frequency of the evaluations.

Each semester, the research project will be completed by the students and evaluated by the instructor every semester.

3. Identify the evaluating entity.

The instructor of the course will evaluate the student research project. The Science

Education Coordinators Committee will monitor the usefulness of the course in the Physics Education Program on a yearly basis.

Part V. Course Proposals

Course proposals for any new courses added, revised, or deleted as a result of this program revision. A course analysis questionnaire and syllabus must be included for each course.

Part VI. Letters of Support or Acknowledgement

Sign-off letters from interested or affected departments including a letter from the Liberal Studies Committee if appropriate. (See page 3 for guidelines.)

Please Number All Pages