LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		04-62c	Appr 4/5/05	Appr 4/26/05

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person	Email Address
Kenneth E. Hershman	hershman@iup.edu
Proposing Department/Unit	Phone
Physics	724 357 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)

_____New Course _____Course Prefix Change _____Course Deletion

_____Course Revision _____Course Number and/or Title Change _____Catalog Description Change

***Current* Course prefix, number and full title**	***Proposed* course prefix, number and full title, if changing**

2. Additional Course Designations: check if appropriate

_____ This course is also proposed as a Liberal Studies Course.

_____ This course is also proposed as an Honors College Course.

_____ Other: (e.g., Women's Studies, Pan-African)

BS – Applied Physics

3. Program Proposals

_____New Degree Program _____Program Title Change _____Other

_____New Minor Program _____New Track

_____Catalog Description Change _____Program Revision

***Current* program name**	***Proposed* program name, if changing**

4. Approvals		**Date**
Department Curriculum Committee Chair(s)	Kenneth E Hershman	12-10-04
Department Chair(s)	Kenneth E Hershman	12-10-04
College Curriculum Committee Chair		02/24/05
College Dean		3/02/05
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate:		
(include title)		
UWUCC Co-Chairs	Gail Sechrist	4-5-05

* where applicable

1. Catalog Description For The Revised Bachelor of Science – Applied Physics Program.

Bachelor of Science–Applied Physics

Liberal Studies: As outlined in Liberal Studies section with the following specifications:			50
Mathematics: MATH 123			
Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track)			
Liberal Studies Electives: 4cr, MATH 124, 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, Two biology electives from the following: BIOL 250, 263, 350, 401, 472		27cr	
Geology Track: GEOS 121, 122, 131, 132, Five Geoscience electives from the following: GEOS 220, 325, 326, 362, 412, 440, 481		23cr	
Other Requirements:			9-15
COSC 110	Problem Solving and Structured Programming	3cr	
COSC 250	Introduction to Numerical Methods	3cr	
MATH 241	Differential Equations	3cr	
Foreign Language Intermediate Level (1)(2)		0-6cr	
Free Electives			0-10
Total Degree Requirements			120

(1) Credits are counted in the Liberal Studies Natural Science Requirement.

(2) 6cr of computer language may substitute for the foreign language requirement: COSC 110; and COSC 210 or higher-level computer science courses (COSC 250 recommended) with department permission."

2. Summary of Changes

a. Table Comparing "Old" And "New" Applied Physics Programs

"OLD" APPLIED PHYSICS PROGRAM			"NEW"APPLIED PHYSICS PROGRAM		
Liberal Studies: As outlined in the Liberal Studies section with the following specifications: Mathematics: MATH 123 Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track) **Liberal Studies Electives**: 4cr, MATH 124, no courses with PHYS prefix		**50**	**Liberal Studies:** As outlined in the Liberal Studies section with the following specifications: Mathematics: MATH 123 Natural Science: CHEM 111-112 (replaced by CHEM 113-114 for Chemistry track) **Liberal Studies Electives**: 4cr. MATH 124, no courses with PHYS prefix		**50**
Major: **Required Courses:**		28	**Major:** **Required Courses:**		28
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 131	Physics II-C Lab	1cr	PHYS 131	Physics II-C Lab	1cr
PHYS 222	Mechanics I	2cr	PHYS 222	Mechanics I	2cr
PHYS 231	Electronics	4cr	PHYS 231	Electronics	4cr
PHYS 242	Optics	3cr	PHYS 345	Optics	3cr
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 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
Solid State Electronics Track: COSC 300, MATH 342, PHYS 323, 342, 353, 432, 475, 476		24cr	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	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	Chemistry Track: CHEM 231, 232, 323, 341, 342, 343, MATH 342		24cr
Biology Track: BIOL 111, 120, CHEM 231, 323, 351, Two biology electives from the following: BIOL 250, 263, 350, 401, 472		27cr	Biology Track: BIOL 111, 120, CHEM 231, 323, 351, Two biology electives from the following: BIOL 250, 263, 350, 401, 472		27cr
Geology track: GEOS 121, 122, 131, 132, Five Geoscience electives from the following: GEOS 220, 325, 326, 362, 412, 440, 481		23cr	Geology track: 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:**		**9-15cr**
COSC 110	Problem Solving and Structured Programming	3cr	COSC 110	Problem Solving and Structured Programming	3cr
COSC 250	Introduction to Numerical	3cr	COSC 250	Introduction to Numerical	3cr

Methods		Methods	
MATH 241 Differential Equations	3cr	MATH 241 Differential Equations	3cr
Foreign Language Intermediate Level (1)	0-6cr	Foreign Language Intermediate Level (1) (2)	0-6cr
Free Electives:	**0-10**	**Free Electives:**	**0-10**
Total Degree Requirements:	**120**	**Total Degree Requirements:**	**120**

Old Catalog Notes:

(1) Intermediate-Level Foreign Language may be included in Liberal Studies electives.

New Catalog Notes:

(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 COSC 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)

PHYS 242 Optics was renumbered as PHYS 345 Optics.

"Footnote (3)" was added to the catalog description to make clear and apparent the foreign language options within this degree program.

3. Justification/rationale for the change.

As stated in the IUP catalog description of "The Foreign Language Requirement" of the College of Natural Science and Mathematics:

> "Unless otherwise indicated, each department adheres to the following foreign language requirement....."

By otherwise indicating, the College of Natural Science and Mathematics permits the departments to utilize appropriate computer science courses to substitute for the foreign language requirement.

Other degrees within the College of Natural Science and Mathematics allow the substitution of computer science for foreign language coursework e.g. BS - Biology, BS – Geology/Geology Track, BS – Geology/Environmental Track.

There is an increased skill level in computer languages expected by industry according to a Physics Department survey of our graduates conducted in the fall of 2004.

The Physics Department has allowed the substitution of computer science coursework for the foreign language requirement in past practice and this revision makes this substitution legitimate.

4.

Ken Hershman

From: "Ken Hershman" <hershman@iup.edu>
To: "Charles McCreary" <ChasMc@grove.iup.edu>; "Roger Smith" <RSMITH@grove.iup.edu>
Cc: "VJ Wijekumar" <vjwije@iup.edu>; <wlf@grove.iup.edu>; <talwar@grove.iup.edu>; "Muhammad Numan" <mznuman@grove.iup.edu>; "Ken Hershman" <HERSHMAN@grove.iup.edu>
Sent: Thursday, December 09, 2004 3:00 PM
Subject: clarification of Foreign Language statement in IUP catalog (Physics degree's)

Dr.s McCreary and Smith,

Since the option became available, the Physics Department has allowed our majors to choose to complete the foreign language either by completing the standard 6cr of intermediate level of foreign language or 6cr of computer science language. Explicitly this latitude is not conveyed in the current catalog statement which simply states they are expected to take 0 - 6cr of foreign language. To make this option clear, we wish to add the following footnote to the catalog description of this requirement in our BA, BS in Physics and our Applied Physics degrees:

(3) 6cr of computer language may substitute for the foreign language requirement: COSC 110; and COSC 210 or higher-level computer science courses (COSC 250 recommended) with department permission.

The Physics Department invites your input into this clarification since it is directly related to your offerings but we would anticipate it to have little effect on your enrollments.

Sincerely,

Ken Hershman
Chairman
IUP Physics Department