LSC Use Only No: LSC Ac	tion-Date:	UWUCC	USE Only No.		Action-Date:	
		04	-62d	Appr "	1/5/05	- Appr41
Curriculum Proposal Cover	Sheet - Uni	versity-W	ide Undergr	0 0	8 E	0 /
Contact Person				Email Add		
Kenneth E. Hershman					n@iup.ed	u
Proposing Department/Unit Physics				Phone 724 357	2370	
Check all appropriate lines and			as requested	. Use a sepa	arate cover	sheet for each
course proposal and for each pro	одгаш ргоро	Sai.				
1. Course Proposals (check all tNew Course	hat apply) Cour	se Prefix C	hange		Course Dele	etion
	Change		oer and/or			scription Change
Current Course prefix, number and fi	ıll title		Proposed course	prefix, numbe	r and full title,	if changing
Course. BS - Applied Physics/Electro- Optics track 3. Program Proposals New Degree Program New Minor Program				_	Other	n Revision
Current program name			<u>Proposed</u> progra	m name, if cha	inging	
4. Approvals						Date
Department Curriculum Committee Chair(s)	: Ken	neth	E Herse	lman	_	12-10-04
Department Chai	r(s) Kenn	The c	Etlersh	man		12-10-04
College Curriculum Committee Cl	nair				6	02/19/05
College D	ean	x an	5.8	. 0		3/02/03
Director of Liberal Studie	s *					
Director of Honors Colleg						
Provos						
Additional signatures as appropria						
(include ti	tle)	200	Λ			
			chist			11

* where applicable

1. Catalog Description For The Revised Bachelor of Science-Applied Physics/Electro-Optics Track Program.

Bachelor of Science-Applied Physics/Electro-Optics Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications: 50 **Mathematics:** MATH 121

Natural Science: CHEM 111-112

Liberal Studies Electives: 4cr, MATH 122, no courses with PHYS prefix

Major:			44		
Required Cou	rses:				
EOPT 105	Computer Interfacing in Electro-Optics	3cr			
EOPT 110	Geometric Optics	3cr			
EOPT 120	Wave Optics	3cr			
EOPT 125	Introduction to Electronics	4cr			
PHYS 100	Prelude to Physics	3cr			
PHYS 115	Physics I for Electro-Optics	3cr			
PHYS 116	Physics II-for Electro-Optics	3cr			
PHYS 222	Mechanics I	2cr			
PHYS 322	Electricity and Magnetism I	2cr			
PHYS 331	Modern Physics	3cr			
PHYS 350	Intermediate Experimental Physics I	3cr			
Choose two of	the following three courses:	6cr			
EOPT 210	Detection and Measurement				
EOPT 220	Introduction to Lasers				
MGMT 234	Introduction to Quality Control				
Choose two of the following three courses: 6cr					
EOPT 240	Fiber Optics				
EOPT 250	High-Vacuum Technology				
EOPT 260	Industrial Applications of Lasers				
Other Requirements:					
COSC/BTED/IFMG 101 or COSC/BTED/COMM/IFMG 201 3c					
COSC 110	Problem Solving and Structured Programming	3cr			
COSC 250	Introduction to Numerical Methods	3cr			
MATH 241	Differential Equations	3cr			
SAFE 145	Workplace Safety Today and Tomorrow	3cr			
Foreign Langu	age Intermediate Level (1) (2)	0-6cr			
Free Electives			5-11		
Total Degree Requirements					

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

^{(2) 6}cr 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
(Changes are shown in bold and italics in the new program.)

"OLD" APPLIED PHYSICS PROGRA		"NEW"APPLIED PHYSICS PROGRA	AM		
Liberal Studies: As outlined in Liberal Studies		Liberal Studies: As outlined in Liberal Studies 50			
section with the following specifications:		section with the following specifications:			
Mathematics: MATH 121		Mathematics: MATH 121			
Natural Science: CHEM 111-112		Natural Science: CHEM 111-112			
Liberal Studies Electives: 4cr, MATH 122, no	1	Liberal Studies Electives: 4cr, MATH 122, no courses			
courses		with PHYS prefix			
with PHYS prefix					
, , , , , , , , , , , , , , , , , , ,					
Major:	28	Major:	28		
Required Courses:	_	Required Courses:			
EOPT 105 Computer Interfacing in Electro-Optics	3cr	EOPT 105 Computer Interfacing in Electro-Optics	3cr		
EOPT 110 Geometric Optics	3cr	EOPT 110 Geometric Optics	3cr		
EOPT 120 Wave Optics	3cr	EOPT 120 Wave Optics	3cr		
EOPT 125 Introduction to Electronics	4cr	EOPT 125 Introduction to Electronics	4cr		
PHYS 100 Prelude to Physics	3cr	PHYS 100 Prelude to Physics	3cr		
PHYS 115 Physics I for Electro-Optics	3cr	PHYS 115 Physics I for Electro-Optics	3cr		
PHYS 116 Physics II for Electro-Optics	3cr	PHYS 116 Physics II for Electro-Optics	3r		
PHYS 222 Mechanics I	2cr	PHYS 222 Mechanics I	2cr		
PHYS 322 Electricity and	2cr	PHYS 322 Electricity and	2cr		
Magnetism I		Magnetism I			
PHYS 331 Modern Physics	3cr	PHYS 331 Modern Physics	3cr		
PHYS 350 Intermediate Experimental	3cr	PHYS 350 Intermediate Experimental	3cr		
Physics I	301	Physics I	301		
Choose two of the following three courses:	6cr	Choose two of the following three courses:	6cr		
EOPT 210 Detection and Measurement	00.	EOPT 210 Detection and Measurement	001		
EOPT 220 Introduction to Lasers		EOPT 220 Introduction to Lasers			
MGMT 234 Introduction to Quality		MGMT 234 Introduction to Quality			
Control		Control			
Choose two of the following three courses:	6cr	Choose two of the following three courses:	6cr		
EOPT 240 Fiber Optics	001	EOPT 240 Fiber Optics	001		
EOPT 250 High-Vacuum Technology		EOPT 250 High-Vacuum Technology			
EOPT 260 Industrial Applications of		EOPT 260 Industrial Applications of			
Lasers		Lasers			
Other Requirements:	15-21	Other Requirements:	15-21		
COSC/BTED/IFMG 101 or	3cr	COSC/BTED/IFMG 101 or	3cr		
COSC/BTED/COMM/IFMG 201	50.	COSC/BTED/COMM/IFMG 201	1 301		
COSC 110 Problem Solving and	3cr	COSC 110 Problem Solving and	3cr		
Structured Programming] 55.	Structured Programming	301		
COSC 250 Introduction to Numerical	3cr	COSC 250 Introduction to Numerical	3cr		
Methods	""	Methods	501		
MATH 241 Differential Equations	3cr	MATH 241 Differential Equations	3cr		
SAFE 145 Workplace Safety Today and	3cr	SAFE 145 Workplace Safety Today and	3cr		
Tomorrow	301	Tomorrow	501		
Foreign Language Intermediate Level	0-6cr	Foreign Language Intermediate Level (1) (2)	0-6cr		
Free Electives:	5 - 11	Free Electives:			
FICE Electives.	2-11	rice Diectives:	5 - 11		
Total Dagrae Paguiroments:	120	Total Dogram Degramments	120		
Total Degree Requirements:	120	Total Degree Requirements:	120		

Old Catalog Notes:

none

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)

"Footnote (1)" was added to emphasize the possible use of foreign language credits toward the Liberal Studies electives expectation.

"Footnote (2)" 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 <u>otherwise indicating</u>, 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.

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