

FORT WAYNE SENATE AGENDA  
MONDAY  
OCTOBER 15, 2012  
12:00 P.M., KT G46

1. Call to order
2. Approval of the minutes of September 10, 2012
3. Acceptance of the agenda – K. Pollock
4. Reports of the Speakers of the Faculties
  - a. Purdue University – P. Dragnev
  - b. Indiana University – M. Nusbaumer
5. Report of the Presiding Officer – A. Downs
6. Special business of the day – Memorial Resolution (Senate Reference No. 12-2) – J. Badia
7. Committee reports requiring action
  - a. Faculty Affairs Committee (Senate Document SD 12-3) – M. Dixon
  - b. Educational Policy Committee (Senate Document SD 12-4) – A. Argast
  - c. Educational Policy Committee (Senate Document SD 12-5) – A. Argast
  - d. Executive Committee (Senate Document SD 12-6) – K. Pollock
8.
  - a. Question Time (Senate Reference No. 12-3)
  - b. Question Time (Senate Reference No. 12-4)
9. New business
10. Committee reports “for information only”  
Curriculum Review Subcommittee (Senate Reference No. 12-5) – A. Livschiz
11. The general good and welfare of the University
12. Adjournment\*

\*The meeting will adjourn or recess by 1:15 p.m.

Approving  
A. Downs  
A. Montenegro  
M. Nusbaumer  
K. Pollock, Chair  
B. Valliere  
Y. Zubovic

Absent  
P. Dragnev

Non Voting  
J. Malanson

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Attachments:

- “Memorial Resolution - Joan Uebelhoer” (SR No. 12-2)
- “Faculty Workload Document” (SD 12-3)
- “Academic Calendar Formula” (SD 12-4)
- “Academic Calendar for 2015-2016” (SD 12-5)
- “Approval of replacement member of the Honors Program Council” (SD 12-6)
- “Question Time – re: filling of vacated tenure-track positions” (SR No. 12-3)
- “Question Time – re: legislative concerns” (SR No. 12-4)
- “Proposal for the Bachelor of Science in Physics with a concentration in Optoelectronics” (SR No. 12-5)

Joan Daley Uebelhoer, an associate faculty member/limited term lecturer in Women's Studies at IPFW, was a mainstay of the program for 30 years. She, along with several other community activists, was a member of a committee organized by Prof. Cathryn Adamsky (Psychology) in the early 1970s to build support for women's studies as an academic offering. Joan taught or co-taught several of the first interdisciplinary courses offered at IPFW, including Women in American Culture and Philosophy and Sexism in Education; she served on the committee that developed the proposal for a minor in Women's studies (which was approved in 1976); and she taught one or two sections of Introduction to Women's Studies (required for the minor and, later, the major) each semester for many, many years. In addition, she developed the topic Global Feminisms for W300, a course approved in the General Education component as well as required for minors, majors, and certificate students in Women's Studies.

Students were very responsive to her teaching, which was based on active learning principles that combined academic and experiential learning years before such teaching practices became codified as the foundation of student-centered learning. In addition to teaching, Joan remained active on the Women's Studies Committee as a participant in the program's semester reviews of teaching and curriculum, helped plan and organize co-curricular events, and contributed to the proposals for a Women's Studies major and Certificate. Of course, all of the teaching and committee participation at IPFW were, until she retired, in her "free time" beyond the obligations of her non-university positions – an impressive list that ranges from elementary and high school teacher to Allen County auditor to

Director of Finances at Public Transportation Company to Director of Allen County Department of Welfare and Director of Planned Parenthood, among others. She also helped found Daybreak Children's Center, the Center for Nonviolence, and the Fort Wayne Hedge School.

The commitment, energy, and hard work of community activists, especially Joan, enabled the IPFW Women's Studies Program to balance academic rigor with activism on behalf of women. This is why the program created the Joan Daley Uebelhoer award, given annually to a student with high academic achievement and a demonstrated commitment to activism. The awardee normally receives a book to represent academics and a bullhorn representing activism, but in the spring semester of 2012, Community Friends of Women's Studies wanted to honor Joan Uebelhoer and the significance of this award by adding a cash award as well.

Recognized regionally and nationally as a tireless activist for women's rights. Joan was included in the National Women's Hall of Fame, and in 2010 she was one of ten women given the Torchbearer Award from the Indiana Commission on Women for "her continuous work to ensure that women had a voice when their rights and equality were jeopardized."

Today it is fitting to honor Joan Daley Uebelhoer for her contributions to the two elements of academic excellence and activism which characterize the IPFW Women's Studies Program and to her lasting impact on the students she taught.

Submitted by Jeanette Clausen and Linda Fox

MEMORANDUM

TO: Fort Wayne Senate

FROM: Marcia Dixson, Chair  
Faculty Affairs Committee

DATE: September 21, 2012

SUBJECT: Faculty Workload Document

DISPOSITION: To the presiding officer for implementation

WHEREAS, there were significant concerns about SD 10-14 Faculty Workloads and Evaluation; and

WHEREAS, the bylaws of the senate state that “tenure, academic promotion, . . . academic responsibilities, standards of appointment, and Faculty morale are topics which fall within the area of responsibility of the [Faculty Affairs] Committee” (Senate Bylaws, 5.3.2); and

WHEREAS, there were inconsistencies between SD 10-14 Faculty Workloads and Evaluations and Promotion and Tenure Criteria, particular in regards to 2a) and b) allowing faculty to choose not to have a research release/expectation; and

WHEREAS, Purdue paid faculty have moved from 10 month to 9 month appointments; and

WHEREAS, no guidelines regarding faculty overload existed and this has become relevant to faculty in recent years;

BE IT RESOLVED, the Fort Wayne Senate approves the attached document to supersede SD 10-14 Faculty Workloads and Evaluation.

In favor  
Marcia Dixson, Chair  
Janet Badia  
Peter Dragnev  
David Liu  
Andres Montenegro  
Brenda Valliere  
Steve Sarratore

Opposed

Absent

## **Workloads and Evaluation for Faculty with Professorial Rank**

A faculty member of the professorial ranks is expected to be engaged in the processes of Scholarship (the acquisition, discovery, appraisal, dissemination of knowledge and creative endeavor), Teaching (communication of this knowledge and the manner of its acquisition or discovery to their immediate community of students and scholars, to their profession, and to society at large, and making student learning possible) or in the case of librarians, Performance of Librarianship duties, and Service to the institution (department, college, university), the profession, the community, the state, the nation and/or the world. Faculty have responsibility for the shared governance of the university because the university is a collegial institution and administration exists to enforce the will of the professoriate.

The IPFW faculty recognize that Scholarship, Teaching and Service are not mutually exclusive. Scholarship is a broad category incorporating activities from creative endeavor, disciplinary research (subject specific research), scholarship of teaching and learning (using a range of research methods, from reflection about classroom practices based on systematic observation to the application of research methods, for investigation of teaching and learning) and the scholarship of engagement (a scholarly agenda that incorporates community issues).

Within the trajectory of a faculty member's career or because of departmental needs, there may be times when it is desirable or necessary to vary the distribution of an individual's workload. The responsibility for workload assignment resides with the department chair or program director in reasonable consultation with the dean.

IPFW shall practice the following policy on faculty workloads and evaluation:

### **Workloads**

The standard faculty teaching workload at IPFW is the equivalent to four three-hour lecture courses. This equivalence shall be defined by each department in consultation with the appropriate dean and consistent with university policy. At the time of their initial appointment, unless otherwise provided in writing, tenure-track faculty will teach the equivalent of three three-hour lecture courses each semester and will receive the equivalent of one three-hour lecture course of released time for pursuit of scholarship. There is an expectation of service to department, college and university as part of shared governance of the university.

After the award of tenure and promotion, a faculty member shall continue with the equivalent of three three-hour lecture courses each semester, execution of a scholarly research program, and service to the institution.

If a workload adjustment is necessary or desirable, and a faculty teach four three-hour lecture courses in a semester, there remains an expectation of scholarly activity and service to the institution. However, the expectation of scholarly activity will be modified.

Changes in faculty teaching workload must occur through discussions between faculty and department chair in consultation with the appropriate dean.

### **Summer Workload**

Academic faculty are 9-month (Purdue benefited) or 10 month (IU benefited) appointments. One three hour course during the summer semester is equivalent to one-ninth of the standard academic year load.

### **12 Month Faculty**

Faculty changing from a 9 month appointment to a 12 month appointment should receive salary commensurate with conversion from 9 to 12 months.

### **Overload**

While overload assignments may be a good way to address short term needs in dynamic changes of curriculum, they should not be used as a substitute for new tenure-track lines. A faculty with research reduction that accepts an overload assignment is expected to maintain the same level of research and service activity.

### **Evaluation**

Each department should establish annual evaluation criteria for teaching, scholarship and service effectiveness consistent with department promotion and tenure criteria. The evaluation criteria should be filed with the appropriate dean and the OAA. The OAA shall make these documents publicly available on the OAA website.

Teaching, service and progress in scholarship shall be reflected in annual evaluation commentary and salary increments. Expectations for faculty shall be clearly articulated so that faculty know what is expected of them and how evaluation will take place.

Every effort should be made to equitably reflect and reward each faculty member's contribution to the university community.

TO: Fort Wayne Senate

FROM: Educational Policy Committee  
Anne Argast, Chair

DATE: September 20, 2012

SUBJ: Academic Calendar Formula

DISPOSITION: To the presiding officer for implementation

WHEREAS Senate Document SD 11-18 is a mostly good template for the creation of successive IPFW academic calendars; and

WHEREAS Senate Document SD 11-18 has an ambiguity; and

WHEREAS ambiguities are a bad thing when creating calendars,

BE IT RESOLVED that Senate Document SD 11-18 be amended by striking the phrase ", the 4th Monday in May," in paragraph 2 of the section headed "SUMMER SEMESTER".

Educational Policy Committee

Approving

Not Approving

Absent

A. Argast, Chair  
C. Gurgur  
Z. Isik-Ercan  
D. Lindquist  
A. Livschiz  
P. McLaughlin  
S. Sarratore  
Y. Zubovic

## IPFW ACADEMIC CALENDAR FORMULA

The academic calendar shall consist of two 16-week regular semesters (including a one-week final examination period), and one 15-week summer semester.

During the Fall and Spring semesters, the standard length of a three-credit-hour course shall be 150 minutes per week for fifteen weeks. The final examination period for courses shall be two hours.

### FALL SEMESTER

1. The first day of classes of the fall semester shall be the Monday falling between August 20 and August 26, inclusive.
2. Labor Day shall be a holiday. Classes shall be suspended starting at 4:30 PM on the Friday preceding Labor Day and resume on the Tuesday following Labor Day.
3. There shall be a two-day suspension of regular classes consisting of the *Monday and Tuesday* after the mid-point between the beginning of the semester and Thanksgiving break.
4. Thanksgiving recess shall consist of Thanksgiving Day, *the preceding Wednesday*, and the following Friday and weekend.

### SPRING SEMESTER

1. The first day of the spring semester may be the Monday following the end of the regular Fall Semester. Typically, weekday classes of the regular spring semester will begin the Monday falling between January 8 and January 14, inclusive.
2. The period of time between the regular fall and spring semesters will be called "Winter Intersession" for the purposes of communication to the public. All official university holidays during the intersession will be recognized and offices will be closed.
3. Martin Luther King, Jr. Day, the third Monday in January, shall be a holiday. Classes will not meet.
4. There shall be a one-week spring recess after the 8th week of regular weekday classes of the spring semester.
5. Weekend College shall be suspended Easter

### weekend. SUMMER SEMESTER

1. The first day of classes of summer semester may be the Monday following the end of the spring semester. Typically, weekday classes will meet in two 6-week summer sessions which will begin following a one-week break at the end of spring semester.
2. **Memorial Day (Observed), the 4th Monday in May, and Friday evening, Saturday, and Sunday of Memorial Day weekend, shall be a holiday. Classes will not meet.**
3. July 4 shall be a holiday. Classes will not meet on July 4 when it falls on a weekday. Classes will not meet on Friday, July 3, when July 4 falls on a Saturday. Classes will not meet on Monday, July 5, when July 4 falls on a Sunday. The Friday evening, Saturday, and Sunday including, or closest to, July 4 shall also be holidays when classes do not meet.



TO: Fort Wayne Senate

FROM: Educational Policy Committee  
Anne Argast, Chair

DATE: Sept. 21, 2012

SUBJ: Academic Calendar for 2015-2016

DISPOSITION: To the presiding officer for implementation

RESOLVED, that the proposed academic calendar for 2015-2016 be adopted.

Educational Policy Committee

Approving

Not Approving

Absent

A. Argast  
C. Gurgur  
Z. Isik-Ercan  
D. Lindquist  
A. Livschiz  
P. McLaughlin  
S. Sarratore  
Y. Zubovic

# ACADEMIC CALENDAR FOR 2015-2016

## Fall Semester, 2015

Monday	24 August	Classes Begin
Friday	4 September	Classes Suspended at 4:30 p.m. (Labor Day Recess)
Monday	7 September	Labor Day Holiday Observed
Tuesday	8 September	Classes Resume
Mon.-Tues.	12-13 October	Fall Recess
Wednesday	14 October	Classes Resume
Tuesday	24 November	Thanksgiving Recess Begins After Last Class
Monday	30 November	Classes Resume
Mon.-Sun.	14-20 December	Final Exam Week/Last Week of Classes

## Winter Inter-session, 2015-2016

Monday	21 December	Classes Begin
Thurs.-Fri.	24-25 December	Classes Suspended (Christmas Holiday)
Monday	28 December	Classes Resume
Thursday	31 December	Classes Suspended (Presidents' Designated Holiday)
Friday	1 January	Classes Suspended (New Year's Day)
Monday	4 January	Classes Resume
Sunday	10 January	Last Day of Classes

## Spring Semester, 2016

Monday	11 January	Classes Begin
Monday	18 January	Martin Luther King Jr. Holiday Observed
Mon.-Sun.	7-13 March	Spring Break Recess
Monday	14 March	Classes Resume
Friday	25 March	Weekend Classes Suspended at 4:30 p.m. (Easter Holiday)
Monday	28 March	Classes Resume
Mon.-Sun	2-8 May	Final Exam Week/ Last Week of Classes
Wednesday	11 May	Tentative Date of Commencement

## Summer Semester, 2016

Monday	9 May	Summer Semester Begins
Monday	16 May	Summer Session I: Classes Begin
Friday	27 May	Memorial Day Recess Begins at 4:30 p.m.
Monday	30 May	Memorial Day Holiday Observed
Tuesday	31 May	Classes Resume
Friday	24 June	Summer Session I: Classes End at 4:30 p.m.
Monday	27 June	Summer Session II: Classes Begin
Monday	4 July	Independence Day Holiday Observed
Tuesday	5 July	Classes Resume
Friday	5 August	Summer Session II: Classes End at 4:30 p.m.
Sunday	21 August	Summer Semester Ends

MEMORANDUM

TO: Fort Wayne Senate

FROM: Kathy Pollock, Chair  
Executive Committee

DATE: September 24, 2012

SUBJ: Approval of replacement member of the Honors Program Council

DISPOSITION: To the Presiding Officer for implementation

WHEREAS, The Bylaws of the Senate provide (5.1.2.) that "... Senate Committees ... shall have the power to fill Committee vacancies for the remainder of an academic year, subject to Senate approval at its next regular meeting"; and

WHEREAS, There is one vacancy on the Honors Program Council; and

WHEREAS, The Honors Program Council has appointed Cheu-jei Lee as the replacement member for the remainder of the 2012-13 academic year;

BE IT RESOLVED, That the Senate approve this appointment.

Approving

A. Downs  
A. Montenegro  
M. Nusbaumer  
K. Pollock, Chair  
B. Valliere  
Y. Zubovic

Absent

P. Dragnev

Non Voting

J. Malanson

Note: Questions concerning this document should be addressed to Kathy Pollock at ext. 15751.

## Question Time

How many tenure-track positions were vacated last year and what are the current plans for filling those positions?

Michael Nusbaumer, Sociology  
Speaker of the Indiana University Faculty

## Question Time

Could we get an update on what is being done about conveying to our state legislature that many of our students are not on a 4 year plan due to circumstances beyond our control and often beyond their control?

Ann Livschiz  
Department of History

To: IPFW Senate

From: Ann Livschiz, Chair  
Curriculum Review Subcommittee

Date: September 26, 2012

Re: Proposal for the Bachelor of Science in Physics, with a Concentration in  
Optoelectronics.

The Curriculum Review Subcommittee supports the proposal for the Bachelor of Science in Physics with a Concentration in Optoelectronics, and finds that the proposal requires no Senate review.

Approving:

Ronald Duchovic

Craig Hill

Nancy Jackson

Il-Hee Kim

Joseph Khamalah (*ex officio*)

Ann Livschiz

Susan Skekloff

Lubomir Stanchev

Not Approving

Absent (or Non-Voting?)

Becky Salmon

Myeong Hwan Kim

December 19, 2001

Revised January 28, 2004

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Attachment A

TO: Deans, Division Directors and Department Chairs  
FROM: Steven T. Sarratore (for the Curriculum Review Subcommittee)  
Associate Vice Chancellor for Academic Programs  
DATE: 6/1/2012  
SUBJECT: Request for Comments

When the Curriculum Review Subcommittee receives a proposal, the Office of Academic Affairs distributes it, on behalf of the Subcommittee, to all deans and division directors and department chairs for comment.

The purpose of this memo is to solicit your comments on the proposal to Concentration in Optoelectronics, which is enclosed.

The Subcommittee especially invites comments on (1) the rationale for the proposed program; (2) the use of IPFW resources; (3) the relationship among proposed and existing programs; and (4) other effects on IPFW and on IPFW's constituencies.

A comment sheet is enclosed.

For the Curriculum Review Subcommittee to conduct its review in a timely manner, it is essential that you reply to Steven T. Sarratore by 7/1/2012.

encs. Proposal Concentration in Optoelectronics  
Comment Sheet

Comment Sheet

Proposal: Concentration in Optoelectronics

Name of Dean, Division Director, or Department Chair:

1. The rationale for the proposed program
2. The use of IPFW resources
3. The relationship among proposed and existing programs
4. Other effects on IPFW and on IPFW's constituencies
5. Other comments

The \_\_\_\_\_  
Unit Name

- has no objections to the proposal.
- endorses the proposal.
- has minor objections to the proposal which can be dealt with through revision.
- has major objections to the proposal and recommends that the CRS postpone review.

Send comments to Steven T. Sarratore by 7/1/2012.



**Proposal for a Concentration in Optoelectronics  
Indiana University - Purdue University Fort Wayne  
April 6, 2012**

prepared by Mark F. Masters, Ph.D., Department of Physics

**1. Name of proposed new program**

Bachelor of Science in Physics with a concentration in Optoelectronics

**2. Title of degree to be conferred**

Bachelor of Science

**3. Field of study, department, and school involved**

Optoelectronics/Physics, Department of Physics, COAS

**4. Objectives of the proposed concentration**

There are several objectives for this concentration:

a. The IPFW Physics Department has a majority of faculty members with research in optics. The department has developed a reputation for optics education. This concentration is an effort to provide students with recognition of increased educational experience in optics differentiating them from the straight physics major.

b. Optics is a very important sub-field within physics. Nationwide, optoelectronics is a growth field with applications ranging from biomedical to astronomical. Optical systems are used extensively in the communication industry. As will be described in section 10, there is significant photonics work in local companies.

c. Within physics, it is critical to provide students with more options than just simply physics as is recommended by the SPIN-UP report and our last program review. SPIN-UP was a National Science Foundation sponsored project that investigated qualities that make a successful, thriving physics department.

(<http://www.aps.org/programs/education/undergrad/faculty/spinup/upload/SPIN-UP-Report.pdf>) In this project, it was found that having one or more concentrations is extremely beneficial to the physics program, helping to attract more majors.

**5. Proposed date of initiation of the new program**

Fall 2012

**6. A statement describing the relationship of the proposed program to the mission and scope of the campus**

Department Mission: The relevant part of the Department of Physics Mission Statement is "producing well prepared graduates who are confident in their abilities and understanding of physics," and "Physics Majors will gain a strong working knowledge of basic science and physics."

The proposed concentration is clearly within this mission. Optoelectronics is an important sub-field within physics (optics and optical instrumentation) and the department believes that the students would benefit from a concentration in these areas rather than the straight physics degree.

College Mission: "...the college provides students with a breadth of knowledge about the global environment and fosters an appreciation and respect for diversity. The College of Arts and Sciences equips students to think critically, communicate effectively, and develop creative solutions to future challenges."

This proposed concentration is directly related to the college mission statement, in particular, the breadth of knowledge and creative solutions to future challenges. It does so by providing a concentration that is of growing importance.

IPFW Mission: "We offer a broad range of high-quality undergraduate, graduate, and continuing education programs that meet regional needs ..." The proposed concentration builds upon departmental strengths in optics and will be of high quality and provide a unique opportunity for Northeast Indiana.

**7. A statement describing the relationship of the proposed program to already existing programs at the campus.**

There are no optics or optoelectronics programs at IPFW besides the optics within the department of physics. This type of concentration could provide collaboration with other departments working on subjects as diverse as mechanical engineering to improving virtual reality in Computer Science and way finding in psychology.

**8. A statement describing the relationship of this program to similar programs in other regional and Indiana post-secondary educational institutions.**

The only optics related degrees in Indiana are at Purdue University, West Lafayette and Rose Hulman in Terre Haute. Therefore, this concentration will be independent.

**9. A statement describing cooperative endeavors explored and/or intended with other institutions particularly those located in the same geographic region.**

There are no other institutions in the region with an optics program.

**10. A statement indicating need for the concentration in terms of manpower supply and demand.**

This concentration adds courses, specialization and focus to a physics degree which is inherently a general program. Looking at [www.hoosierdata.in.gov](http://www.hoosierdata.in.gov), it is clear that there will be significant demand for physical scientists in the next 4 years. However, this data does not provide fine details about physical scientists nor does it provide information about educational levels of these scientists.

However, there are a number of companies that have an interest in optics and photonics. These include ITT Exelis (formerly ITT Aerospace), in which there is significant involvement in optical measurements and interferometry; Northrop Grumman, with work in optical atmospheric effects, Fort Wayne Laser Die in which they use lasers to create wire dies, and SWS-Trimac, which does laser machining. Because of the use of the fiber optic network, Frontier needs employees that can work in optical calibration.

**11. A statement describing resources over and above present levels required to initiate the program**

Physics already offers these courses as electives, so it will not make any difference in terms of load. A statement about library resources is attached.

**12. Proposed Curriculum**

The proposed curriculum starts with the basic physics degree and then adds 4 optics courses and an electronic instrumentation course.

Please see attached draft Bingo sheet for details.

Meeting IPFW General education requirements: 24 credit hours (some of the General Education Requirements are met by courses listed below such as MA 16500 meeting the Area I quantitative reasoning requirements).

**COAS Requirements: 11 credit hours.**

Writing 3 ch

Foreign Language 8 ch

**General Education: 24 credit hours**

**Chemistry requirements: 8 credit hours**

**Core Physics courses: 42 credit hours**

PHYS 15200 – Mechanics 5 ch

PHYS 25100 – Heat, Electricity and Optics 5 ch

PHYS 31000 – Intermediate Mechanics 4 ch

PHYS 31200 - Intermediate Electricity and Magnetism 3 ch

PHYS 31300 - Intermediate Electricity and Magnetism II 3 ch

PHYS 32200 – Optics. 3 ch

PHYS 34500 – Optics Laboratory 1 ch

PHYS 34200 - Modern Physics 3 ch

PHYS 34300 – Modern Physics Laboratory 1 ch

PHYS 34600 – Advanced Laboratory 1 ch

PHYS 36100 – Electronics 4 ch

PHYS 51500 – Statistical Mechanics 3 ch

PHYS 52000 - Mathematical Methods for physicists 3 ch

PHYS 55000 – Quantum Mechanics 3 ch

**Core Optics Courses: 20 credit hours**

PHYS 47000 Research 3 ch

PHYS 51100 Laser Physics 3 ch

PHYS 52200 coherent optics 3 ch

PHYS 52400 physical optics and spectroscopy 4 ch

PHYS 53600 electronic instrumentation 4ch

PHYS 57000 Special topics, optics only. 3 ch

**Core Math Courses: 18 credit hours**

MA 16500 Calculus I 4 ch

MA 16600 Calculus II 4 ch

MA 26100 Calculus III 4 ch

MA 35100 Linear Algebra 3 ch

MA 36300 Differential Equations 3 ch

**Total required courses 123 credit hours.**

**Walter E. Helmke Library**  
**Indiana University-Purdue University Fort Wayne**

**Resources in Support of Proposed Concentration in Optoelectronics**

January 10, 2012

This review provides an overview of the Helmke Library resources available to students and faculty in the proposed Optoelectronics concentration.

The combined physical and electronic collection at the Helmke Library that covers the subject area of Optoelectronics is satisfactory. As a result it will be essential to increase and strengthen the collection in order to build an excellent core collection that adequately supports the concentration. To augment resources available to IPFW students, staff and faculty the library uses the Document Delivery Service to borrow materials from other libraries and institutions as well.

**I. Monographic Materials (print and electronic)**

Optics, Optoelectronics, Light, Spectroscopy, Photonics and laser subjects in Physics	296
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In addition general Physics subject has about 1900 titles in Helmke library IUCAT holdings. The library collection also has many resources in optics, optoelectronics, light, spectroscopy, laser and photonics in related fields such as Chemistry, Electrical Engineering, Nuclear Engineering, General Engineering and General Civil Engineering.

**II. Journals and Databases**

Helmke Library offers a strong selection of databases and indexes providing access to full text journals, including the major databases of *Web of Science*, *Physical Review Online Archive (PROLA)*, *MathSciNet*, *Academic Search Premier*, and the *Wiley Online Library*. Additional broader subject coverage needed to support the needs of faculty and students is provided through databases such as *IEE Xplore*, *Compendex*, *ACM Digital Library*, *Dissertations and Theses* and *Conference Papers Index*.

A search in Journal Citation Reports (JCR) 2010 Science edition for journals in Optics and Applied Physics yields 175 journal titles. Of the 175 titles, Helmke library owns 81 journals. These 81 journals are among the top notch journals in the field. Journal ranking is by impact factor.

**III. Professional Support**

The subject liaison librarian will continue to provide research advice and assistance to students and faculty. The liaison librarian can provide support through involvement in Blackboard-supported classes, individual research consultations, in-class instructional sessions on selecting and searching databases, or tailored course guides to guide students through particular research assignments and resources. However, in the future, it may be necessary to support library efforts to recruit a librarian with a strong science background.

**PHYSICS Concentration in Optics**

BACHELOR OF SCIENCE – 124 CREDITS

**IPFW GENERAL EDUCATION REQUIREMENT**

**I. LING & NUM FOUNDATIONS**

ENG W131	3	
COM 11400	3	
MA 16500	X	
PHYS 15200	X	

**II. NAT & PHYS SCIENCES**

CHM 11500	X	
PHYS 15200	X	

**III. THE IND, CULT, & SOC**

	3	
	3	

**IV. HUMANISTIC THOUGHT**

	3	
	3	

**V. CREATIVE & ARTISTIC EXPRESS**

	3	
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**VI. INQUIRY & ANALYSIS**

	3	
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**COAS REQUIREMENTS**

**WRITING**

ENG W 140/W233	3	
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**FOREIGN LANGUAGE**

	4	
	4	

**MATHEMATICAL SCIENCES**

MA 16500	4	
MA 16600	4	
MA 26100	4	
MA 35100	3	
MA 36300	3	

**CHEMISTRY**

CHM 11500	4	
CHM 11600	4	

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**PHYSICS CORE**

PHYS 15200	5	
PHYS 25100	5	
PHYS 31000	4	
PHYS 31200	3	
PHYS 31300	3	
PHYS 32200	3	
PHYS 34200	3	
PHYS 34300	1	
PHYS 34500	1	
PHYS 34600	1	
PHYS 36100	4	
PHYS 51500	3	
PHYS 52000	3	
PHYS 55000	3	

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**OPTICS CONCENTRATION**

PHYS 47000 (Optics Research)	3	
PHYS 51100 (Laser Physics)	3	
PHYS 52200 (Coherent Optics)	3	
PHYS 52400 (Physical Optics)	4	
PHYS 53600 (Electronic Instrum)	4	
PHYS 57000 (Variable Title, Optics related)	3	

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