

**Indiana University East  
Faculty Senate 2008/09  
Curriculum Committee**

**Bachelor of Science in Informatics  
Activation of New Degree Program Proposal  
Indiana University East**

**Campus: East**

**Proposed Degree: Bachelor of Science (B.S.) in Informatics**

**Projected Date of Implementation: Fall 2009**

**Objective of the Program and Background Information**

The objective of this program is to address the needs of those students seeking a broad understanding of information technology, its social and psychological dimensions, and its application to other chosen disciplines. The proposed B.S. degree program in Informatics will prepare students to become highly skilled professionals. Students in this program are expected to acquire strong technical and analytical skills that can be applied not only in industry but also to other disciplines, such as biology, communication studies, psychology, health care, and decision sciences. With appropriate planning, students with this degree can also meet the academic requirements to enter graduate programs in computer science, bio-informatics, information systems, applied mathematics and other disciplines.

The Indiana University East strategic plan calls for the development of additional baccalaureate and graduate degree programs. The economic and social development of the region that IU East serves will be better served by having a greater number of individuals skilled in the use and application of information technology. We expect that much of the projected growth in computer and technology related jobs will not be strictly in technical areas, such as hardware and software development. Instead, much of it will be in the skilled use of powerful software technology in other fields such as medicine, business, social services, biotechnology, marketing and communication, and the arts and humanities. A primary goal of this degree program is to educate students broadly in the technical, psychological and social aspects of information technology. Another goal is to help students apply this knowledge to a variety of career opportunities.

The degree proposed is in line with the approach of the Indiana University School of Informatics. Europeans have long used the term "Informatics" (or "Informatika") to define the science of information and information technology and its application to various disciplines. The School of Informatics at IU defines this term as the "art, science and human dimensions of information technology. It is information technology applied to human problems."<sup>1</sup> Furthermore, the School views "Informatics" as a discipline distinct from such fields as computer science, information science and other traditional disciplines related to information technology. The School views informatics as

more general, basic and applied than any of these related disciplines.

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<sup>1</sup> <http://www.informatics.indiana.edu/>

It is more general in that it emphasizes breadth across issues in all of the related disciplines, and also includes social and ethical issues regarding the 'information revolution.' It is more basic in that it examines foundational questions about the very nature of information and computation. It is more applied since the aim is to produce qualified information technology professionals to meet the rapidly rising need in our region.<sup>1</sup>

The Indiana Commission for Higher Education approved the B.S. in Informatics degree for the IU regional campuses in 2004.

### **Clientele to be Served**

This degree is geared toward multiple audiences. First, it is designed for individuals who may wish to develop a more in-depth information technology background, specializing on the development of software and web-based applications and gaining an advanced understanding of information technology platforms and operating systems. Second, it is focused on those students who wish to augment their discipline specific knowledge with an ability to use information technology and tools to solve everyday problems and issues. Third, the degree is also geared to students who might wish to eventually pursue graduate education in a number of fields such as health care administration, business management, biotechnology and communication studies.

### **Employment Possibilities**

Graduates could expect to find employment in a wide range of jobs. Qualifications for specific employment options would vary depending on the structure and the nature of an individual's program of study. The possibilities include such positions as:

- Web Designer
- Public Relations Specialist
- Supply Chain Manager
- Medical Records Analyst
- Systems Analyst
- Bio-technologist
- Statistician
- and many more

### **Curriculum**

The curriculum consists of 120 credit hours, composed of the following:

- 39 Credit Hours—General Education
- 34 Credit Hours—Informatics Core
- 15-18 Credit Hours—Informatics Cognate Area
- 29-32 Credit Hours—General Electives, including the First-Year Seminar for students entering with less than 12 transferable credits

### **Program Description**

Prospective students would begin with a core curriculum in informatics, and then proceed to choose a complementary area of specialization, hereafter to be called “the cognate area”. The program is designed with both pre-established cognates and the flexibility to create, with the assistance of an advisor, a custom-designed cognate area. These custom-designed cognates must be approved by the Informatics Faculty Committee.

Total Degree Requirements—120 credit hours

1. Informatics Core Courses (34 credit hours)

INFO-I 101 Introduction to Informatics (4 cr)  
INFO-I 201 Mathematical Foundations of Informatics (4 cr)  
INFO-I 202 Social Informatics (3 cr)  
INFO-I 210 Information Infrastructure I (4 cr)  
INFO-I 211 Information Infrastructure II (4 cr)  
INFO-I 308 Information Representation (3 cr)

Two of the following four courses:

INFO-I 300 Human-Computer Interaction (3 cr)  
INFO-I 303 Organizational Informatics (3 cr)  
INFO-I 310 Multimedia and Technology (3 cr)  
INFO-I 320 Distributed Systems and Collaborative Computing (3 cr)

One of the following capstone options (senior standing for both):

INFO-I 450/451 Design and Implementation of an Information System (6 cr/3 cr—two semesters)  
INFO-I 460/461 Thesis/Senior Project (6 cr/3 cr—two semesters)  
INFO-I 420 Internship in Informatics: Professional Practice (6 cr/3 cr—two semesters)  
with the approval of program director, this may be substituted for the above capstone options if completed in junior or senior year, and the required project reports are completed.

1. Cognate Area Courses (15-18 credit hours)

**1. New Media (15 credit hours)**

NEWM-N 100 New Media (New)  
JOUR-J 110 Foundations of Journalism and Mass Communications  
TEL-T 336 Digital Video Production  
Two additional courses, at least one at the 300 or 400 level—with advisor approval

**2. Web Technology (15 credit hours)**

CMCL-C 334 Current Topics: Web Design  
FINA-U 330 Computer Art, Interactive Media  
FINA-F 102 Fundamental Studio—2D  
BUS – S430 Electronic Commerce

One additional course—with advisor approval

**3. Health Services Administration (16 credit hours)**

NURS-A 111 Medical Terminology  
SPEA-H120 Contemporary Healthcare Issues (New)  
SPEA- H441 Legal Aspects of Health Services Administration (New)  
HIA M420 Healthcare Planning and Information Systems (New)  
SPEA H320 Health Systems Administration (New)

4. **Business** (15 credit hours)  
One additional course—with advisor approval  
BUS-W 100 Introduction to Business Administration  
BUS-A 201 Introduction to Accounting I  
ECON-E 103 or E 104 Microeconomics or Macroeconomics  
Any two 300 or 400 level business courses (e.g., BUS-M301, P301, F301)—with advisor approval.
  5. **Bioinformatics** (15 credit hours)  
MATH-K 300 Statistics  
BIOL-L 107 Biological Concepts  
BIOL-T 107 Bioinformatics  
BIOL-L 314 Genetics
  6. **Custom Designed Cognate** (15-18 credit hours)  
15-18 credit hours chosen with the help of a cognate advisor (any full-time faculty member) and approved by the Informatics Faculty Committee at IU East
2. General Education Courses (39 credit hours)  
See IU East General Education requirements.
  3. General Elective Courses (29-32 credit hours)  
Courses selected by the student. IU East degree requirements specify that at least 30 credit hours of total must be at the 300 level or higher. Students entering the program with less than 12 hours of transferable credit are required to complete the First-Year Seminar.

### **Program Faculty**

The Informatics Program will be directed by an interdisciplinary faculty group, with Larry Richards serving as the Interim Chair of the group. This group will be composed of faculty members from multiple schools. Full-time faculty members who regularly teach Informatics courses will have Informatics added to their title—for example, Assistant Professor of Biology and Informatics, or Lecturer in Psychology and Informatics, or Professor of Management and Informatics. The current courses in Informatics, Management Information Systems and Computer Science will continue to be offered by the faculty in the School of Business and Economics. Other Informatics courses will be offered by the Schools in which the faculty members teaching the courses reside. It is anticipated that the revenues from these courses will flow to the Schools of the faculty teaching the courses.

The responsibilities of the Informatics Faculty Committee include:

- 1) Oversight of the overall curriculum design;
- 2) Projection of the long term schedule of courses to be offered, and notification of the appropriate School Deans of courses to be scheduled;
- 3) Oversight of assessment design and implementation;
- 4) Approval of proposed custom designed cognates; and
- 5) Approval of graduation audits.

### **Informatics Faculty Committee**

Larry Richards (Interim Chair), Ron Bingaman (NSM), Kumara Jayasuriya (NSM), Kim Greer (NSM), Tonya Breymier (NURS), Suzi Shapiro (HSS), Elliot McKinley (HSS), Jerome Mahaffey (HSS), Sue McFadden

(Library), David Frantz (BUSE), Gregory D. Weber (BUSE), Marcy Jance (BUSE), Replacement Faculty Member in Computer Information Systems/Informatics (BUSE)

### **Advising and Scheduling**

Students will be assigned to a core informatics faculty member for general advising. When students select a cognate area, they will also have a cognate or field specific advisor who will have responsibility for their discipline specific interests.

For administrative purposes, the scheduling of core informatics courses will be coordinated by the Dean of the School of Business and Economics, working with other School Deans and the Informatics Faculty Committee. Cognate courses will be scheduled in their respective schools, keeping the School Deans and the Informatics Faculty Committee informed.

### **Resources**

The B.S. in Informatics can be initiated with current faculty and one replacement faculty member in Computer Information Systems/Informatics. No new resources are being requested to initiate the program. Program development and growth will provide additional revenues for future expansion. All cognates may not be fully operational at the outset. The proposal allows for cognates to become operational as resources are secured.

### **External Review**

An external review of the program would be conducted within three years, and every five years thereafter.

### **Assessment**

The success of the students in the program will be assessed using number of different methods.

- a) Formative assessment of the informatics curriculum will be conducted through course-embedded assessment tools to monitor student progress.
- b) All students must complete a capstone exam/project developed by the supervisors of the cognate areas. These capstone exams/projects will serve as one of the summative assessment tools. The Informatics Faculty Committee will be responsible for providing oversight of the capstone requirements.
- c) Each cognate area advisor will survey or interview the program's graduating seniors for feedback on the informatics program with respect to the campus learning objectives. The graduating seniors will be surveyed on their personal sense of preparedness for their future professions.
- d) Feedback from all the assessment mechanisms will be collected and subsequently used to improve the program by the informatics committee.

## Sample Curriculum by Semester

### First Semester

UCOL U101 First Year Experience (2)  
Math 123 (3) If needed, or an elective course  
BSS General Education (3)  
INFO I-101 (4)  
ENG W131 (3)

### Third Semester

INFO I-201 (4)  
INFO I210 (4)  
Humanities General Ed (3)  
INFO Cognate 2 (3)  
Elective (1)

### Fifth Semester

INFO I-308 (3)  
INFO Cognate 3 (3)  
BSS General Ed (3)  
INFO Elective 1 (3)  
Elective (3)

### Seventh Semester

INFO Capstone 1 (3)  
INFO Cognate 5 (3)  
Elective (9)

### Second Semester

Math General Education (3)  
BSS General Education (3)  
Humanities General Ed (3)  
INFO Cognate 1 (3)  
Science General Ed (3)

### Fourth Semester

Math/Science Gen Ed (3)  
Info I-211 (4)  
INFO I-202 (4)  
Humanities General Ed (3)  
Elective (1)

### Sixth Semester

INFO Elective 2 (3)  
INFO Cognate 4 (3)  
Elective (9)

### Eighth Semester

INFO Capstone21 (3)  
INFO Cognate 6/Elective  
Elective (9)