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Undergraduate Curriculum and Academic Policy Undergraduate Curriculum and Academic Policy  
Committee Minutes Committee

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11-13-2006

### Undergraduate Curriculum and Academic Policy Committee Minutes, November 13, 2006

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# Undergraduate Curriculum and Academic Policy Committee

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## Minutes of November 13, 2006 Meeting

**Present:** Susan Carrafiello, Candace Cherrington, Jeanne Fraker, Qingbo Huang, Nathan Klingbeil, Bobbie Pohlman, Tom Sav, David Seitz, Carol Wagner-Williams, Karen Wilhoit. Guests: Tom Sudkamp (CECS).

**Approved Minutes** of October 23, 2006.

### UCAPC Subcommittee Reports

**Writing Across the Curriculum Committee (WAC)** -- Joe Law, Chair (unable to attend -- No Report)

**University General Education Committee (UGEC)** -- Susan Carrafiello, Chair, reported that the committee at its November meeting began to investigate the integration of Civic Engagement into the General Education Program. Those minutes being pending of approval, the October meeting minutes of UGEC are available as follows

[UGEC Minutes, October 4, 2006](#)

**Undergraduate Academic Program Review Committee (UAPRC)** -- Rudy Fichtenbaum, Chair (Tom Sav reporting -- No Report being that program review submissions and reviews will not begin until after January 2007).

### Course Inventory and Modification Requests

#### CECS

Approved Inventories:\* CS 350

Approved Modifications: CS 242, CS 400, CS 402

\* The committee noted that the syllabus of the proposal was absent of sufficient information per the curriculum procedures and guidelines for the approval of new courses. The committee noted that several such problems arose at its October meeting and previously. While the committee was willing at this time to approve the proposal, it requires for future proposals that the CECS better conform to the required procedures and guidelines (in particular, syllabi guidelines) as specified in

[www.wright.edu/ucapc/0002/process/invchg.htm](http://www.wright.edu/ucapc/0002/process/invchg.htm)

#### CONH

Approved Inventories:\* NUR 446, NUR 447, NUR 448, NUR 449

Approved Modifications: NUR 442, NUR 445, NUR 452, NUR 453, NUR 454, NUR 455

\* The committee noted that the syllabi of the proposals were absent of sufficient information per the curriculum procedures and guidelines for the approval of new courses. While the committee was willing at this time to approve the proposals, it requires for future proposals that the CONH better conform to the required procedures and guidelines (in particular, syllabi guidelines) as specified in

V. Program Changes

CECS

Withdrawn from consideration by the CECS

B.S. Electrical Engineering -- Computer Engineering (CpE) Option

Approved

[\*\*B.S. Computer Science\\* -- General Degree Program\*\*](#)

[\*\*B.S. Computer Science\\* -- Business Option\*\*](#)

[\*\*B.S. Computer Science\\* -- Bioinformatics Option\*\*](#)

[\*\*B.S. Computer Science\\* -- Computational Science Option\*\*](#)

[\*\*B.A. Computer Science\\* -- Degree Program\*\*](#)

[\*\*B.A. Computer Science\\* -- Business Option\*\*](#)

[\*\*Minor in CIT\*\*](#)

\* The committee made many recommendations for changes, including changes in the General Education Program (specifically the absence and, therefore, the need to include Area V requirements visibility and more understandably to students) and some minor changes in incorrect credit hours for Computer Science Major Courses. The committee recommendations were accepted by the CECS and are incorporated in the above proposals.

CONH

Approved

[\*\*BEACON: BSN Nursing Program\*\*](#)

**Adjourned: Next meeting January 8 and Winter Quarter Meetings and other Schedules as follows:**

<b>UCAPC Meeting</b>	<b>UCAPC Submission Deadline (No Exceptions: receipt after forwards to the next meeting)</b>	<b>Faculty Senate Meeting New Business</b>	<b>Faculty Senate Meeting Old Business</b>
Current Meeting November 13		January 8	February 5
January 8, 12:30 p.m.	December 22, 12:00 Noon	February 5	March 5
February 5, 12:30 p.m.	January 24, 12:00 Noon	March 5	April 2
March 5, 12:30 p.m.	February 21, 12:00 Noon	April 2	May 7
April TBA	TBA	May 7	June 4
May TBA	TBA	June 4	Fall 2007

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[\*\*UCAPC HOME\*\*](#)

**University General Education Committee Meeting, Oct. 4, 2006, 4-5 p.m.** Present: Rich Bullock (CoLA), Mindy Diesslin (CoSM), Carole Endres (RSCoB), Jean Edwards (CoSM), David Reynolds (CECS), Theodore Hufford (Student Government), Jeanne Fraker (UVC), Lillie Howard (Provost's office), Joe Law (WAC), Mary Kenton (Honors), Susan Carrafiello (CoLA, Chair)

1. After introductions, the Committee reviewed the UGEC charge.
2. Dr. Jean Edwards has been appointed the new GE Coordinator and will formally assume her duties on December 1. This year, she is also serving on UGEC as the COSM representative. She shared her vision of General education, especially her interest in tying GE to lifelong learning. She will teach an Honors PSY105 in the spring and hopes to implement ideas there that can be translated to the larger GE sections.
3. The committee then discussed GE assessment. The reports for the 2005-2006 academic year have been completed and are already online at the University assessment website. The Chair agreed to develop a timetable for the completion of the year 2 GE assessment reports. The Chair will also gather the information from the GE evaluation instruments administered during spring 2006.
4. The committee next discussed possible revisions to the current GE objectives, focusing especially on service learning/civic engagement. After some discussion, the committee decided to invite Dr. Robert Sweeney, Chair of the Provost's Task Force on Community and Civic Engagement, to attend the next meeting and share that committee's conclusions about the state of civic engagement at Wright State. Joe Law and Rich Bullock also agreed to work on language that reflected the NCA and OBR for possible revisions to the GE objectives.
5. The meeting adjourned at 5:00 p.m. The next meeting will be scheduled for early November.

# Undergraduate Curriculum and Academic Policy Committee

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## Procedures and Guidelines for Proposing New Courses and Deleting Existing Courses (University Undergraduate Course Inventory)

### New Course Proposals and Deletion of Existing Courses

Academic units have primary responsibility for determining the University's undergraduate course inventory. Upon review, the University Curriculum and Academic Policy Committee normally approves recommendations for proposing new courses and deleting existing courses from the inventory. However, proposals for new courses may potentially duplicate in one or more respects the course offerings of other academic units or more generally raise academic concerns. The deletion of existing courses may affect other academic units, including degree requirements and the program of course requirements as would typically be listed in the undergraduate catalog. The following process is intended to facilitate appropriate levels of communication between academic units and the university wide review of undergraduate courses, programs, and degree requirements. In addition, new course proposals must meet general university guidelines, such as appropriate level of course offering and academic rigor, course prerequisites, and, when applicable, general education requirements and writing across the curriculum requirements.

A formal proposal for a new course or for deleting an existing course must be reviewed and approved by the appropriate department and college or school curriculum committee, the college or school faculty if required by that unit, the University Curriculum and Academic Policy Committee, and the Faculty Senate.

Proposals for new courses and for the deletion of existing courses carrying both undergraduate credit and graduate credit must be submitted to the Undergraduate Curriculum and Academic Policy Committee following the procedures contained herein and to the Graduate Council following the procedures established by that Council.

### Course Numbering System

**0-99** Precollege-level courses.

**100-499** Lower division courses intended for undergraduate credit only. The first digit indicates the general level of the course: 1 for a first-year course, 2 for a second-year course, 3 for a third-year course, 4 for a fourth-year course. Courses in this category that are acceptable for graduate credit carry alternate numbers in which the first digit only is changed to a 5 or 6 according to the definitions below.

**500-599** Courses that carry graduate credit only in major field different from that of the department offering of the course. Most such courses will be alternate designations of courses normally numbered 300-499.

**600-699** Courses that carry graduate credit in any major field and have alternate designations in which the first digit is a 4 when taken for undergraduate credit.

**700-799** Courses intended for graduate credit only.

## Procedures and Guidelines for Preparing New Course Proposals and Deletion of Existing Courses

The following establishes the procedures and guidelines for proposals of new courses and the deletion of existing courses from the University's inventory of undergraduate courses:

### I. New Course Proposals

- a. Submit a **Course Inventory Request Form**
- b. Attach a Course Syllabus based on the following guidelines\*:

#### I. Course Information

Course Title  
Course Number  
Course Meeting Times

#### II. Course Materials (specify required and recommended)

Textbooks  
Articles, Readings, etc.  
Computing and/or Internet Resources  
Other

#### III. Course Objectives

#### IV. Course Prerequisites

#### V. Method of Instruction

#### VI. Evaluation and Policy

Tests (numerical points or percentage)  
Quizzes (numerical points or percentage)  
In-Class Writing (numerical points or percentage)  
Out-of-Class Writing , Papers, or Research (numerical points or percentage)  
Individual Projects or Group Projects (numerical points or percentage)  
Attendance Policy (numerical points or percentage)

#### VII. Grading Policy

Final course letter grade earned in relation to evaluation and policy.  
When applicable, final Writing Intensive grade earned in relation to writing requirements (for Writing Across the Curriculum courses in General Education and in the Major)

#### VIII. Assignments and Course Outline

Textbook, Journal Articles, Internet Resources, etc.  
Organized by topic and date or week of meeting times.

#### IX. Other Information

Office of Disability Services (guidelines to accommodate students)  
For General Education Program Courses: General Education Goals in general and specifically how the course is part of the program.  
For Writing Across the Curriculum Courses: WAC Goals in

general and specifically how the course is part of the program.

\* Some courses may differ significantly from traditional offerings or may be more loosely structured and, therefore, not be appropriate to this guideline. In such cases, a course syllabus format suitable to that course should be developed and submitted.

## II. Deletion of an Existing Course\*

### a. Submit a [Course Inventory Request Form](#)

\* Note: Deletion of a course from the inventory allows a reuse of that course number for future new course proposals. If an academic unit wishes to deactivate a course so it remains in the University's inventory of courses for possible future offerings but does not appear in the Undergraduate Catalog, then it is required to submit a Course Modification Request Form instead of a Course Inventory Request Form.

## **Procedures for Submitting Course Inventory Requests**

An original and eighteen copies of the Course Inventory Request Form and course syllabus (for new course proposals) attached to each Form should be submitted through the dean's office of the department's college or school to the Undergraduate Curriculum and Academic Policy Committee. At the same time, the dean's office should provide copies to all other deans of colleges and schools to be made available for additional review by curriculum committees, departments, and faculty and to the Office of the Provost, and other university offices as deemed necessary by the Office of the Provost and the Council of Deans.

A flowchart of the curriculum and academic policy review process for proposing new courses and deleting existing courses is contained in the following (requires Adobe Acrobat Reader):

### **[Flowchart for Curriculum and Academic Policy Review and Approval Process](#)**

Approved:

Undergraduate Curriculum and Academic Policy Committee, November 27, 2001

Faculty Senate, February 4, 2002

General Faculty, February 19, 2002

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Return To:

**[Guidelines For New and Existing Courses](#)**

or

**[UCAPC HOME](#)**

# Department of Computer Science and Computer Engineering

## Program Change Proposal

### *BS in Computer Science*

Motivation: The proposed changes to the Bachelor of Science Degree in Computer Science have been designed to provide flexibility to the students in designing their program of study both in the CS major and in the courses taken in other disciplines.

The number of areas in computer science has grown significantly in the past decade making it essential that the curriculum provides students with a sufficient number of electives to design a program with both breadth and depth in their desired specialty. To accomplish this, the number of CS/CEG electives has been increased by reducing the number of specifically required courses. The same strategy has been employed for science requirements and general electives; the number of electives has been increased by reducing the number of required courses.

The differences between the current and the proposed programs are indicated on the following two sheets. Course names and credit hours indicated in red in the current program have been changed in the new program. Courses entirely in red have been deleted. Items in blue in the new program indicate the additions or changes from the current program. The changes to the program are summarized below using the categories from the program description.

#### I. Required CS and CEG courses.

The number of elective courses has been expanded from 20 to 36 credit hours. This was accomplished by the removing the computer engineering courses CEG 255, 260, 360, and 434 from the list of courses required for computer science majors. Computer science wishing to have a more depth in the hardware aspects of computer engineering may take these as electives.

The course CEG 333 (Introduction to Unix, 2 credit hours) has been deleted and replaced with an expanded version CEG 233 (Linux and Windows, 4 credit hours). This course will introduce features of the two prominent operating systems at an earlier point in the curriculum so that students will have experience with these systems when they take the upper level courses in the program.

#### II. General Education.

The Area V natural science requirement was previously satisfied by the required physics sequence. It is now satisfied by the student's selection of a three quarter laboratory science sequence from CHM 121,122,123; BIO 111, 112, 115; PHY 240/200, 242/202, 244/204; or GL 251/252, 253/254, 255/256.



### III. Mathematics and Science (previously labeled Major Courses).

The statistics requirement has been extended to provide students the opportunity to take classes offered by the Mathematics Department as well as by the Department of Industrial and Systems Engineering.

The science requirement has been changed from specifically requiring a year of physics to allowing students to select a year long laboratory science course. This allows students to participate in the growing synergy between computational techniques and sciences such as chemistry, biology, geology, etc.

### IV. General Electives (previously labeled Other Requirements)

Twenty hours of general electives replaces the language requirement and an elective concentration consisting of 16 hours from a single liberal arts, science, mathematics, or engineering department. The language requirement currently consists of eight hours of English 200 or above courses or foreign language courses.

The proposed program consists of 191 credit hours and satisfies the requirements of the Computer Accreditation Commission of ABET. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# Proposed Computer Science Bachelor of Science Degree Program (191 Hours)

## I. COMPUTER SCIENCE AND ENGINEERING COURSES (86 hours)

### A. Required Computer Science Courses (31 hours)

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 400 Data Structures and Algorithms	4
CS 405 Intro to Data Base Man. Systems	4
CS 415 Soc. Implications of Computing	3
CS 466 Introduction to Formal Lang.	4
CS 480 Comparative Languages	4

### B. Required Computer Engineering Courses (16 hours)

CEG 233 Linux and Windows	4
CEG 320 Computer Organization	4
CEG 433 Operating Systems	4
CEG 460 Intro. to Software Engineering	4

### C. CS/CEG Electives (36 hours)

At least 16 hours must be at the 400 level.

### D. Technical Communication (3 hours)

EGR 335 Technical Communications	3
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## II. GENERAL EDUCATION (40 hours)

### Area I- Communication and Mathematical Skills (8 hours)

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>satisfied by required Mathematics/Statistics courses</i> )	

### Area II – Cultural-Social Foundations (8 hours)

### Area III – Human Behavior (8 hours)

### Area IV – Human Expression (4 hours)

### Additional courses from Areas II, III, and IV (8 hours)

### Area V – Natural Sciences

*Satisfied by required Laboratory Science sequence.*

### Area VI – College Component (4 hours)

Select any Area VI College of Liberal Arts course. 4

## III. MATHEMATICS AND SCIENCE COURSES (45 hours)

### A. Required Mathematics/Statistics Courses (24 hours)

MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3

STT 363, STT 360, or ISE 301 Statistics 3

**B. Required Laboratory Science Sequence (12-16 hours)**

Select one of the following three quarter laboratory science sequences:

CHM 121,122,123	15
BIO 111, 112, 115	12
PHY 240/200, 242/202, 244/204	16
GL 251/252, 253/254, 255/256	13

**C. Science and Mathematics Electives (5-9 hours)**

There must be a total of at least 21 hours in areas B and C. This total must include at least 18 hours of natural science courses.

**IV. GENERAL ELECTIVES (20 hours)**

Electives may be from any area of study.

GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.  
GENERAL ELECTIVES: Courses may be chosen from any area of study.  
SCIENCE COURSES: Courses must be appropriate for science or engineering majors and satisfy the General Education science requirements.  
CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.  
ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.

# CURRENT COMPUTER SCIENCE BACHELOR OF SCIENCE DEGREE PROGRAM (193 hours)

## I. COMPUTER SCIENCE AND ENGR COURSES

### A. Required Computer Science Courses (31 hours)

CS 240	Computer Science I	4
CS 241	Computer Science II	4
CS 242	Computer Science III	4
CS 400	Data Structure and SW Design	4
CS 405	Intro to Data Base Man. Systems	4
CS 415	Soc. Implications of Computing	3
CS 466	Introduction to Formal Lang.	4
CS 480	Comparative Languages	4

### B. Required Computer Engineering Courses (30 hours)

CEG 255	Intro to Comp. Info. Systems	4
CEG 260	Digital Comp. HW/Switching Circ.	4
CEG 320	Comp. Org. & Assembly Lang. Prog.	4
CEG 333	Introduction to Unix	2
CEG 360	Digital System Design	4
CEG 433	Operating Systems	4
CEG 434	Concurrent Software Design	4
CEG 460	Intro. to Software Engineering	4

### C. CS/CEG 400 Level Electives (20 hours)

### D. Technical Communication (3 hours)

EGR 335	Technical Communications	3
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## II. GENERAL EDUCATION (40 hours)

### Area I- Communication and Mathematical Skills

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>see required Math/Stat section</i> )	

### Area II – Cultural-Social Foundations-8 Hrs.

History – Select 1 Course:	
CLS 150, HST 101, HST 102, HST 103	4
The Non Western World(WI) – Select 1 Course:	
CSE/CST, RSE/RST, HLT 202, SW 272, URS 200	4

### Area III – Human Behavior – 8 Hrs.

Select 2 Courses From *Different* Rows:  
Econ.: EC200(Some WI), EC 290 (WI)  
Political Science: PLS 200  
Psychology: PSY 105  
Sociology(WI): SOC200, WMS200

### Area IV – Human Expression – 4 Hrs.

Select one course:  
Great Books (WI):  
CLS, ENG, PHL or REL 204

Fine and Performing Arts:  
ART, MUS or TH 214 or MUS 290

**Additional courses from Areas II, III, and IV-8Hrs.**

Select one course from two of these three areas. Except for Area II, the course selected must come from a different subcategory than the course(s) chosen to meet the area requirement. (See undergraduate catalog-Gen. Ed. Section for complete details).

**Area VI – College Component 4 Hrs.**

Select any Area VI College of Liberal Arts course

**III. MAJOR COURSES**

**A. Required Mathematics/Statistics Courses (25 hours)**

MTH 229	Calculus I	5
MTH 230	Calculus II	5
MTH 231	Calculus III	5
MTH 253	Matrix Algebra	3
MTH 257	Discrete Mathematics	3
ISE 301	Stats for Dev. & Manu. I	4

**B. Required Physics Courses (16 hours)**

PHY 240	Physics	4
PHY 200	Physics I Lab	1
PHY 242	Physics II	4
PHY 202	Physics II Lab	1
PHY 244	Physics III	5
PHY 204	Physics III Lab	1

**C. Science Course (4 hours)**

CHM, BIO, or PHY for science majors	4
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**IV. OTHER REQUIREMENTS**

**A. Required Language Courses (8 hours)**

**B. Elective concentration from one Liberal Arts,  
Science, Math or Engineering Department  
(16 hours)**

**Department of Computer Science and Computer Engineering**  
**Program Change Proposal**

*BS in Computer Science: Business Option*

Motivation: This proposal incorporates the changes in the general computer science BS program into the Business Option. The core Business Option courses remain the same: economics and accounting. Following the theme of allowing more flexibility in the program, the specific list of permissible courses has been removed and the students are free to select any additional business courses.

The differences between the current business option and the proposed business option are indicated on the following two sheets. Course names and credit hours indicated in red in the current program have been changed in the new program. Courses entirely in red have been deleted. Items in blue in the proposed program indicate the additions or changes from the current program. The changes and modifications that have been described in the BS in Computer Science proposal will not be repeated here.

I. Required CS and CEG courses.

Same changes as in general BS in Computer Science proposal.

II. General Education.

Same changes as in general BS in Computer Science proposal.

III. Mathematics and Science Courses (previously labeled Major Courses)

Same changes as in the general BS in Computer Science proposal.

IV. Business Concentration Courses.

The proposal replaces the choice of three courses from a list, which includes a computer science course, with the selection of two business courses.

The proposed program consists of 191 credit hours and satisfies the requirements of the Computer Accreditation Commission of ABET. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# Proposed Computer Science Bachelor of Science Degree- Business Option (191 Hours)

## I. COMPUTER SCIENCE AND ENGINEERING COURSES (86 hours)

### A. Required Computer Science Courses (31 hours)

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 400 Data Structures and Algorithms	4
CS 405 Intro to Data Base Management Systems	4
CS 415 Social Implications of Computing	3
CS 466 Introduction to Formal Languages	4
CS 480 Comparative Languages	4

### B. Required Computer Engineering Courses (16 hours)

CEG 233 Linux and Windows	4
CEG 320 Computer Organization.	4
CEG 433 Operating Systems I	4
CEG 460 Introduction to Software Engineering	4

### C. CS/CEG Electives (36 hours)

At least 16 hours must be at the 400 level

### D. Technical Communication (3 hours)

EGR 335 Technical Communications	3
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## II. GENERAL EDUCATIONS (36 hours)

### Area I- Communication and Mathematical Skills (8 hours)

ENG 101 - Composition I	4
ENG 102 - Composition I	4
Mathematics ( <i>satisfied by required Mathematics/Statistics courses</i> )	

### Area II – Cultural-Social Foundations (8 hours)

### Area III – Human Behavior (4 hours)

Select *One* Course:

Political Science: PLS 200

Psychology: PSY 105

Sociology (WI): SOC 200,WMS 200

*Additional Area III requirement satisfied by EC 204, EC 205 in Business Option courses*

### Area IV – Human Expression (8 hours)

### Additional courses from Areas II, III, and IV (8 hours)

### Area V – Natural Sciences

*Satisfied by required Laboratory Science sequence.*

### Area VI – College Component (4 hours)

Select any Area VI College of Liberal Arts course 4

## III. MATHEMATICS AND SCIENCE COURSES (45 hours)

### A. Required Mathematics/Statistics Courses (24 hours)

MTH 229 Calculus I	5
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MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
STT 363, STT 360, or ISE 301 Statistics	3

**B. Required Laboratory Science Sequence (12-16 hours)**

Select one of the following three quarter laboratory science sequences:

CHM 121,122,123	15
BIO 111, 112, 115	12
PHY 240/200, 242/202, 244/204	16
GL 251/252, 253/254, 255/256	13

**C. Science and Mathematics Electives (5-9 hours)**

There must be a total of at least 21 hours in areas B and C. This total must include at least 18 hours of natural science courses.

**V. BUSINESS CONCENTRATION COURSES (24 hours)**

**Business Concentration Core (16 hours)**

EC204 Prin of Microeconomics	4
EC205 Prin of Macroeconomics	4
ACC 204 Accounting Principles I	4
ACC 205 Accounting Principles II	4

**Business Concentration Electives (8 hours)**

Select at least two additional business courses to complement Business Option core courses.

GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.  
 GENERAL ELECTIVES: Courses may be chosen from any area of study.  
 SCIENCE COURSES: Courses must be appropriate for science or engineering majors and satisfy the General Education science requirements.  
 CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.  
 ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.



## Current Computer Science Business Option (193 Hours)

### I. COMPUTER SCIENCE AND ENGR COURSES

	Hours
<b>A. Required Computer Science Courses (31 hours)</b>	
CS 240 Computer Science I	4
CS 241 Computer Science II	4
CS 242 Computer Science III	4
CS 400 Data Structures and Software Design	4
CS 405 Intro to Data Base Management Systems	4
CS 415 Social Implications of Computing	3
CS 466 Introduction to Formal Languages	4
CS 480 Comparative Languages	4
<b>B. Required Computer Engineering Courses (30 hours)</b>	
CEG 255 Intro to Computer Information Systems	4
CEG 260 Digital Computer HW/Switching	4
CEG 320 Computer Org. & Assembly Lang Prog.	4
CEG 333 Introduction to Unix	2
CEG 360 Digital System Design	4
CEG 433 Operating Systems	4
CEG 434 Concurrent Software Design	4
CEG 460 Introduction to Software Engineering	4
<b>C. CS/CEG Electives (20 hours)</b>	
<b>D. Technical Communication (3 hours)</b>	
EGR 335 Technical Communications	3

### II. GENERAL EDUCATIONS (44 hours)

#### Area I- Communication and Mathematical Skills

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>see required Math/Stat section</i> )	

#### Area II – Cultural-Social Foundations-8 Hrs.

History – Select 1 Course:	
CLS 150, HST 101, HST 102, HST 103	4
The Non Western World (WI) – Select 1 Course:	
CSE/CST, RSE/RST, HLT 202, SW 272,	
URS 200	4

#### Area III – Human Behavior – 12 Hrs.

Economics: EC204 Prin of Microeconomics	4
Economics: EC205 Prin of Macroeconomics	4
Select <i>One</i> Course:	

Political Science: PLS 200  
Psychology: PSY 105  
Sociology (WI): SOC200,SOC205,WMS200

**Area IV – Human Expression – 4 Hrs.**

Select one course:

Great Books (WI):  
CLS, ENG, PHL or REL 204  
Fine and Performing Arts:  
ART, MUS or TH 214 or MUS 290

**Additional courses from Areas II, III, and IV – 8 Hrs.**

Select one course from two of these three areas. Except for Area II, the course selected must come from a different subcategory than courses(s) chosen to meet the area requirement. (See the Undergraduate catalog – General Education Section for complete details.)

**Area VI – College Component 4 Hrs.**

Select any Area VI College of Liberal Arts course.

**III. MAJOR COURSES**

**A. Required Mathematics/Statistics Courses (25 hours)**

MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
ISE 301 Stats for Dev & Manu. I	4

**B. Required Physics Courses (16 hours)**

PHY 240 Physics I	4
PHY 200 Physics I Lab	1
PHY 242 Physics II	4
PHY 202 Physics II Lab	1
PHY 244 Physics III	5
PHY 204 Physics III Lab	1

**C. Science Course (4 hours)**

CHM, BIO, or PHY for science majors 4

**IV. OTHER REQUIREMENTS**

**Business Concentration (20 hours)**

ACC 204 Accounting Principles I	4
ACC 205 Accounting Principles II	4

Choose 3 courses from the following electives:

CS 214, LAW 300, FIN 310, MKT 300,  
MGT 304, MS 204, MS 205

# Department of Computer Science and Computer Engineering

## Program Change Proposal

### *BS in Computer Science: Bioinformatics Option*

Motivation: This proposal incorporates the changes in the general computer science BS program into the Bioinformatics Option. In addition, one course was added to the list of required CS/CEG courses so that all options of the BS in Computer Science degree would have the same core of basic required computer science and computer engineering courses.

The differences between the current science option and the proposed computational science option are indicated on the following two sheets. Course names and credit hours indicated in red in the current program have been changed in the new program. Courses entirely in red have been deleted. Items in blue in the proposed program indicate the additions or changes from the current program. Items in green are in both programs, but they are listed in different categories.

#### I. Required CS and CEG courses.

The course CS 466 (Introduction to Formal Languages) has been added to the list of required courses. With this addition, the basic courses are the same as in the general BS in Computer Science proposal.

#### II. General Education.

Same changes as in the general BS in Computer Science proposal.

#### III. Mathematics Courses (previously labeled Major Courses)

Same changes as in the general BS in Computer Science proposal.

#### IV. Bioinformatics Required Courses (previously labeled Required Science Courses)

Same as in the current bioinformatics option.

The proposed program consists of 194 credit hours and satisfies the requirements of the Computer Accreditation Commission of ABET. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# Proposed Computer Science Bachelor of Science Degree Program Bioinformatics Option (194 Hours)

## I. COMPUTER SCIENCE AND ENGR COURSE (58 hours)

### A. Required Computer Science Courses (31 hours)

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 400 Data Structures and Algorithms	4
CS 405 Intro to Database Management Systems	4
CS 415 Social Implications of Computing	3
CS 466 Introduction to Formal Languages	4
CS 480 Comparative Languages	4

### B. Required Computer Engineering Courses (16 hours)

CEG 233 Linux and Windows	4
CEG 320 Computer Organization.	4
CEG 433 Operating Systems I	4
CEG 460 Introduction to Software Engineering	4

### C. CS/CEG Electives (8 hours)

Electives must be 400-level CS/CEG courses from the bioinformatics electives list to provide additional breadth in the discipline.

### D. Technical Communication (3 hours)

EGR 335 Technical Communications	
OR BIO 310 Issues in Science	3

## II. GENERAL EDUCATION (40 hours)

### Area I - Communication and Mathematical Skills (8 hours)

ENG 101 Composition I	4
ENG 102 Composition II	4
Mathematics ( <i>satisfied by required Mathematics/Statistics courses</i> )	

### Area II – Cultural-Social Foundations (8 hours)

### Area III – Human Behavior (8 hours)

### Area IV – Human Expression (4 hours)

### Additional courses from areas II, III, and IV (8 hours)

### Area V – Natural Sciences

*Satisfied by required Bioinformatics courses..*

### Area VI – College Component (4 hours)

Select any Area VI College of Liberal Arts course.

## III. REQUIRED MATHEMATICS/STATISTICS COURSES (24 hours)

MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
STT 363, STT360, or ISE 301 Statistics	3

#### IV. BIOINFORMATICS REQUIRED COURSES (72 hours)

##### A. Required Computer Science Courses (12 hours)

CS 271 Intro to Bioinformatics	4
CS 409 Intro to Artificial Intelligence	4
CS 471 Algorithms for Bioinformatics	4

##### B. Required Chemistry Courses (33 hours)

CHM 121 Submicroscopic Chemistry	5
CHM 122 Macroscopic Chemistry	5
CHM 123 Reaction Dynamics	5
CHM 211 Organic Chemistry I	4
CHM 215 Organic Chemistry I Lab	2
CHM 212 Organic Chemistry II	4
CHM 216 Organic Chemistry II Lab	2
CHM 213 Organic Chemistry III	4
CHM 217 Organic Chemistry III Lab	2

##### C. Required Biological Sciences Courses (27 hours)

BIO 111 Human Biology	4
BIO 112 Cell Biology and Genetics	4
BIO 115 Biodiversity and Ecology	4
BIO 210 Molecular Biology	4
BIO 211 Molecular Genetics	4
BIO 212 Cell Biology	4
BIO 213 Cell-Molecular Biology Lab	2
BIO 492 Senior Seminar	1

GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.

GENERAL ELECTIVES: Courses may be chosen from any area of study.

SCIENCE COURSES: Courses must be appropriate for science or engineering majors and satisfy the General Education science requirements.

CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.

ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.

# CURRENT COMPUTER SCIENCE BACHELOR OF SCIENCE BIOINFORMATICS OPTION (193 hours)

## I. COMPUTER SCIENCE AND ENGR COURSES

### HOURS

#### A. REQUIRED COMPUTER SCIENCE COURSES (39 HOURS)

CS 240	Computer Science I	4
CS 241	Computer Science II	4
CS 242	Computer Science III	4
CS 271	Intro to Bioinformatics	4
CS 400	Data Structures and Software Design	4
CS 405	Intro to Data Base Management Systems	4
CS 409	Intro to Artificial Intelligence	4
CS 415	Social Implications of Computing	3
CS 471	Algorithms for Bioinformatics	4
CS 480	Comparative Languages	4

#### B. Required Computer Engineering Courses (18 hours)

CEG 255	Intro. to Computer Information Systems	4
CEG 260	Digital Computer HW/Switching Circuits	4
CEG 320	Comp. Org. & Assembly Language Prog.	4
CEG 333	Introduction to UNIX	2
CEG 433	Operating Systems	4

#### C. Electives (8 hours)

Electives must be 400-level CS/CEG courses from the bioinformatics electives list to provide additional breadth in the discipline.

#### D. Technical Communication (3 hours)

EGR 335	Technical Communications	
OR BIO 310	Issues in Science	3

## II. GENERAL EDUCATION (40 hours)

### Area I - Communication and Mathematical Skills

ENG 101	Composition I	4
ENG 102	Composition II	4
Mathematics (See required MTH/STAT courses)		

### Area II – Cultural-Social Foundations-8 Hrs.

History – Select 1 Course:		
CLS 150, HST 101, HST 102, HST 103		4
The Non Western World (WI) – Select 1 Course		
CSE/CST, RSE/RST, HLT 202, SW 272,		
URS 200		4

### Area III – Human Behavior – 8 Hrs.

Select 2 Courses From <i>Different</i> Rows:		
Economics: EC200 (Some WI), EC 290 (WI)		
Political Science: PLS 200		
Psychology: PSY 105		
Sociology(WI): SOC200, WMS200		

### Area IV – Human Expression – 4 Hrs.

Select one course:

Great Books (WI):

CLS, ENG, PHL or REL 204

Fine and Performing Arts:

ART, MUS or TH 214 or MUS 290

**Additional courses from areas II, III, and IV-8-Hrs.**

Select one course from two of three areas. Except for Area II, the course selected must come from a different subcategory than the course(s) chosen to meet the area requirement.

(See undergraduate catalog – Gen. Ed. Section for complete details.)

**Area VI – College Component 4 Hrs.**

Select any Area VI College of Liberal Arts course.

**III. MAJOR COURSES**

	<u>Hours</u>
<b>A. Required Mathematics/Statistics Courses (25 hours)</b>	
MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
ISE 301 Stats for Dev. & Manu.I	4

**IV. Required Science Courses**

<b>A. Required Chemistry Courses (33 hours)</b>	
CHM 121 Submicroscopic Chemistry	5
CHM 122 Macroscopic Chemistry	5
CHM 123 Reaction Dynamics	5
CHM 211 Organic Chemistry I	4
CHM 212 Organic Chemistry II	4
CHM 216 Organic Chemistry II Lab	2
CHM 213 Organic Chemistry III	4
CHM 217 Organic Chemistry III Lab	2
<b>B. Required Biological Sciences Courses (27 hours)</b>	
BIO 111 Human Biology	4
BIO 112 Cell Biology and Genetics	4
BIO 210 Molecular Biology	4
BIO 211 Molecular Genetics	4
BIO 212 Cell Biology	4
BIO 213 Cell-Molecular Biology Lab	2
BIO 492 Senior Seminar	1

# Department of Computer Science and Computer Engineering

## Program Change Proposal

### *BS in Computer Science: Computational Science Option*

Motivation: This proposal incorporates the changes in the general computer science BS program into the Computational Science Option and adds flexibility within the selection of courses in the option. The name of the option has been changed from Science Option to Computational Science Option reflecting the interaction between computation and science in the program and the addition of required courses in numerical methods and computational science.

The differences between the current science option and the proposed computational science option are indicated on the following two sheets. Course names and credit hours indicated in red in the current program have been changed in the new program. Courses entirely in red have been deleted. Items in blue in the proposed program indicate the additions or changes from the current program. The changes and modifications that have been described in the BS in Computer Science proposal will not be repeated here.

#### I. Required CS and CEG courses.

Same changes as in general BS in Computer Science proposal.

#### II. General Education.

Same changes as in general BS in Computer Science proposal.

#### III. Computational Science Courses (previously labeled Major Courses)

The mathematics and statistics requirements are the same as the general BS in Computer Science proposal.

The current program requires 16 hours of physics; an additional four hour science course; 16 hours in a second concentration from a science, mathematics, or engineering department; and several additional mathematics or engineering courses.

This has been replaced by three required courses in topics in computational science (CS 316, 317, and 350) and 28 hours of elective science courses. The selection must include a year long laboratory science course and a minimum of 45 hours of mathematics and science.



#### IV. General Electives

No general electives: same as in the current science option.

The proposed program consists of 190 credit hours and satisfies the requirements of the Computer Accreditation Commission of ABET. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# Proposed Computer Science Bachelor of Science Degree Program Computational Science Option (190 Hours)

## I. COMPUTER SCIENCE AND ENGR COURSES (86 hours)

### A. Required Computer Science Courses (31 hours)

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 400 Data Structures and Algorithms	4
CS 405 Intro to Data Base Mgt Systems	4
CS 415 Social Implications of Computing	3
CS 466 Introduction to Formal Languages	4
CS 480 Comparative Languages	4

### B. Required Computer Engineering Courses (16 hours)

CEG 233 Linux and Windows	4
CEG 320 Computer Organization	4
CEG 433 Operating Systems	4
CEG 460 Introduction to Software Engineering	4

### C. CS/CEG Electives (36 hours)

At least 16 hours must be at the 400 level.

### D. Technical Communication (3 hours)

EGR 335 Technical Communications	3
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## II. GENERAL EDUCATION (40 hours)

### Area I- Communication and Mathematical Skills (8 hours)

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>satisfied by required Mathematics/Statistics courses</i> )	

### Area II – Cultural-Social Foundations (8 hours)

### Area III – Human Behavior (8 hours)

### Area IV – Human Expression (4 hours)

### Additional courses from Areas II, III, and IV (8 hours)

### Area V – Natural Sciences

*Satisfied by required Laboratory Science sequence.*

### Area VI – College Component (4 hours)

Select any Area VI College of Liberal Arts course.

## III. COMPUTATIONAL SCIENCE COURSES (64 hours)

**A. Required Mathematics/Statistics Courses (24 hours)**

Hours

MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
STT 363, STT360, or ISE 301 Statistics	3

**B. Computer Science Courses (12 hrs)**

CS 316 Numerical Methods I	4
CS 317 Numerical Methods II	4
CS 350 Computational Tools and Techniques for Data Analysis	4

**C. Required Laboratory Science Sequence (12-16 hours)**

Select one of the following three quarter laboratory science sequences:

CHM 121, 122, 123	15
BIO 111, 112, 115	12
PHY 240/200, 242/202, 244/204	16
GL 251/252, 253/254, 255/256	13

**D. Computational Science Elective Courses (12-16 hours)**

Select courses from science, mathematics, computer science, or computer engineering. There must be a total of at least 28 hours in areas C and D. This total must include at least 18 hours of natural science courses. Courses must be chosen to ensure a minimum of 45 hours in mathematics or science courses.

GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.  
GENERAL ELECTIVES: Courses may be chosen from any area of study.  
SCIENCE COURSES: Courses must be appropriate for science or engineering majors and satisfy the General Education science requirements.  
CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.  
ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.

# Current Computer Science Bachelor of Science Degree Program

## Computational Science Option (193 Hours)

### I. COMPUTER SCIENCE AND ENGR COURSES

#### A. Required Computer Science Courses (31 hours)

CS 240	Computer Science I	4
CS 241	Computer Science II	4
CS 242	Computer Science III	4
CS 400	Data Structures and Software Design	4
CS 405	Intro to Data Base Management Systems	4
CS 415	Social Implications of Computing	3
CS 466	Introduction to Formal Languages	4
CS 480	Comparative Languages	4

#### B. Required Computer Engineering Courses (30 hours)

CEG 255	Intro to Computer Information Systems	4
CEG 260	Digital Comp. HW/Switching Circuits	4
CEG 320	Comp. Org. & Assembly Language Prog.	4
CEG 333	Introduction to Unix	2
CEG 360	Digital System Design	4
CEG 433	Operating Systems	4
CEG 434	Concurrent Software Design	4
CEG 460	Introduction to Software Engineering	4

#### C. CS/CEG Level Electives (20 hours)

#### D. Technical Communication (3 hours)

EGR 335	Technical Communications	3
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### II. GENERAL EDUCATION (40 hours)

#### Area I- Communication and Mathematical Skills

ENG 101	- Composition I	4
ENG 102	- Composition II	4
MATHEMATICS - See Required Mathematics Courses		

#### Area II – Cultural-Social Foundations-8 Hrs.

History – Select 1 Course:  
CLS 150, HST 101, HST 102, HST 103  
The Non Western World (WI) – Select 1 Course:  
CSE/CST, RSE/RST, HLT 202, SW 272,  
URS 200

#### Area III – Human Behavior – 8 Hrs.

Select 2 Courses From *Different* Rows  
Economics: EC200 (Some WI), EC 290 (WI)  
Political Science: PLS 200  
Psychology: PSY 105  
Sociology(WI):SOC200, SOC205, WMS200

#### Area IV – Human Expression – 4 Hrs.

Select one course:

Great Books (WI):  
CLS, ENG, PHL or REL 204  
Fine and Performing Arts:  
ART, MUS or TH 214 or MUS 290

**Additional courses from Areas II, III, and IV – 8 Hrs.**

Select one course from two of these three areas. Except for Area II, the course selected must come from a different Subcategory than the course(s) chosen to meet the area requirement. (See undergraduate catalog – General Education section for complete details.)

**Area VI – College Component 4 Hrs.**

Select any Area VI College of Liberal Arts course.

**III. MAJOR COURSES**

**A. Required Mathematics/Statistics Courses (25 hours)**

	<u>Hours</u>
MTH 229 Calculus I	5
MTH 230 Calculus II	5
MTH 231 Calculus III	5
MTH 253 Matrix Algebra	3
MTH 257 Discrete Mathematics	3
ISE 301 Stats for Dev. & Manu. I	4

**B. Required Physics Courses (16 hours)**

PHY 240 Physics I	4
PHY 200 Physic I Lab	1
PHY 242 Physics II	4
PHY 202 Physics II Lab	1
PHY 244 Physics III	5
PHY 204 Physics III Lab	1

**C. Science Course (4 hours)**

CHM, BIO, or PHY for science majors 4

**IV. OTHER REQUIREMENTS**

**Required 2nd concentration from one Science,  
Math or Engineering Department (12-16 hours\*)**

**B. Required MTH/EE Courses (Choose from MTH 232, 233, 333, 407, 431, 432, 451, 452, 457, 458; EE 301/2, 303/4, 321, 322, 331, 345) (8-12 hours\*)**

\*Sections IV.A & IV.B require a total of 24 credit hours

# Department of Computer Science and Computer Engineering

## Program Change Proposal

### *BA in Computer Science*

Motivation: The Department of Computer Science and Engineering has had a Bachelor of Arts since its inception in 1983. The degree last appeared in the 1993 Undergraduate Catalog. At that time, the majority of computer science students preferred to obtain a BS degree so the department focused its resources on the BS, MS and the then recently approved Ph.D. degrees. The department believes that it is now time, in fact past time, to re-invigorate the BA program. Dr. Lillie Howard, Vice President for Curriculum and Instruction, and Dr. Thomas Sav, Chair of the Undergraduate Curriculum and Policies Committee, were consulted on the proper method to accomplish this. Both Dr. Howard and Dr. Sav indicated that, since the BA in Computer Science is an existing degree within the University, the appropriate method is to submit the changes needed to update the program as program changes to UCAPC.

The distinction between a BS and a BA in Computer Science is the intended professional objectives of the student. The BS degree trains students to participate in the development of new software, hardware, and computer technology. The BA degree is designed for students who primarily desire to be users of the technology.

The modifications to the BA program are designed to produce graduates for information technology and database applications. These skills are currently in demand in the Miami Valley by employers such as Lexus-Nexus, Mead Data Central, the Logistics Command at Wright Patterson AFB, and other local companies. The establishment of DAYTAOhio at Wright State emphasizes the State's commitment to the growth of the IT industry in the region.

Being ten years out of date, the differences between the BA currently on the books and the proposed program are substantial. The University general education program has changed and many of the computer science courses in the 1993 BA program are no longer in the catalog. The entire program is given on the attached sheets and the program is summarized below using the categories from the program description.

#### I. Required CS and CEG courses (previously labeled Major Courses C. and D.)

The program requires an introductory computer science sequence (CS 240, 241, 242), Data Structures (CS 400), Formal Language Theory (CS 466), Computer Organization (CEG 260), and Software Engineering (CEG 460), all of which are basic courses for a CS curriculum. The additional required courses, Client Server Databases (CS 302), Linux and Windows (CEG 233), and Information Technology Systems (CEG 355), reflect the

applications orientation of the degree. The 32 hours of CS/CEG electives permit the student to select additional courses in their particular areas of specialization.

## II. General Education.

The general education requirements have been updated to the current general education program. The college component is the same as in the current BS in Computer Science degree.

## III. Quantitative Reasoning (previously labeled Major Courses A.).

The quantitative reasoning requirements consist of Calculus for Social Scientists (MTH 228), Discrete Mathematics (MTH 257), statistics (STT 160), and Symbolic Logic (PHL 223).

## IV. General Electives

The program is completed with 40 hours of general electives. This category replaces the required language courses, elective courses, and required second concentration of the current BA. Within the 40 hours, students must select two courses from COM 101, 203, 221 or PHL 124, 200, 211. Recognizing that graduates of this program will be in the IT industry, these selections are designed to enhance their communications skills and their awareness of ethical issues in their profession.

The current and proposed programs are given on the following sheets. Due to the extensive nature of the changes, individual changes were not marked.

The proposed program consists of 187 credit hours. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# **PROPOSED COMPUTER SCIENCE BACHELOR OF ARTS DEGREE PROGRAM**

(187 Hours)

## **I. COMPUTER SCIENCE AND ENGR COURSES (78 hours)**

### **A. Required Computer Science Courses (27 hours)**

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 302 Client Server Databases	4
CS 400 Data Structures and Algorithms	4
CS 415 Soc. Implications of Computing	3
CS 466 Formal Languages	4

### **B. Required Computer Engineering Courses (16 hours)**

CEG 233 Linux and Windows	4
CEG 320 Computer Organization	4
CEG 355 Info.Tech Systems	4
CEG 460 Intro. to Software Engr	4

### **C. CS/CEG Electives (32 hours)**

At least 16 hours must be at the 400 level.

### **D. Technical Communication (3 hours)**

EGR 335 Tech Communications	3
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## **II. GENERAL EDUCATION (52 hours)**

### **Area I- Communication and Mathematical Skills (8 hours)**

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>satisfied by Quantitative Reasoning section</i> )	

### **Area II – Cultural-Social Foundations (8 hours)**

### **Area III – Human Behavior (8 hours)**

### **Area IV – Human Expression (4 hours)**

### **Area V – Natural Science (12 hours)**

### **Additional courses from Areas II, III, and IV (8 hours)**

### **Area VI – College Component (8 hours)**

Select any Area VI College of Liberal Arts course.

## **III. QUANTITATIVE REASONING (17 hours)**

MTH 228 Calculus for Social Sciences	5
MTH 257 Discrete Mathematics	3
STT 160 Statistical Concepts	5
PHL 223 Symbolic Logic	4

## **IV. GENERAL ELECTIVES (40 hours)**

Must include at least two courses from COM 101, 203, 221 or PHL 124, 200, 211.



GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.

GENERAL ELECTIVES: Courses may be chosen from any area of study. .

CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.

ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.

# **CURRENT COMPUTER SCIENCE BACHELOR OF ARTS DEGREE PROGRAM (199 Hours)**

## **I. GENERAL EDUCATION**

### Area One – Communication & Mathematical Skills

ENG 101 Composition I  
ENG 102 Composition II  
MATHEMATICS – see below

### Area Two – The Western Experience

HST 101 Ancient and Medieval Eras  
HST 102 Western World in Transition  
HST 103 Modern Western World  
Great Books of the Western World  
Fine and Performing Arts

### Area Three - The Nonwestern World

Comparative Studies (CST)  
Regional Studies (RST)

### Area Four – Understanding the Contemporary World

Natural Science – See PHYSICS below  
PSY 105 Psychology: Science of Behavior  
SOC 200 Social Life  
PLS 200 Political Life  
EC 200 Economic Life

## **II. MAJOR COURSES**

### A. Required Mathematics/Statistics Courses (24 Hours)

132 Calculus I  
133 Calculus II  
253 Matrix Algebra  
257 Discrete Mathematics  
360 Applied Statistics I (STT)  
361 Applied Statistics II (STT)

### B. Required Physics Courses (15 Hours)

111 Principles of Physics  
101 Physics Lab  
112 Principles of Physics  
102 Physics Lab  
113 Principles of Physics  
103 Physics Lab

### C. Required Computer Science Courses (20 Hrs)

141 Computer Programming I  
142 Computer Programming II  
146 Introduction to Data Structures  
400 Data Structures & Software Design  
466 Intro to Formal Languages

### D. Required Computer Engineering Courses (20 Hours)

260 Dig Comp Hard/Switch Circuits  
320 Computer Organization  
360 Digital System Design

430 Assembly Language Programming  
431 Real Time Software Design

- E. CS/CEG Electives (CS 316, 317, CS, CEG 400 level or above .Maximum 4 hours of programming workshops (24 hours)
- F. Required Language Courses (12 hours)
- G. Required Elective Courses (10 hours)
- H. Required Second Concentration (32 Hours)  
Choose from a single Liberal Arts Department.  
(Recommended: 8 hours of computer applications.)

**Department of Computer Science and Computer Engineering**  
**Program Change Proposal**

*BA in Computer Science: Business Option*

Motivation: This proposal combines the proposed modifications to the Computer Science BA program with the business option of the BS degree program. The changes to the BA program itself are not discussed here, since they were presented in a separate proposal.

I. Required CS and CEG courses

Same as in the proposed BA program.

II. General Education.

Same as in the proposed BA program.

III. Quantitative Reasoning (previously labeled Major Courses A.).

Same as in the proposed BA program.

IV. Business Option

The requirements for the business option are the same as those of the business option in the proposed BS program. The credit hours for the courses in the option are obtained by reducing the number of general electives.

V. General Electives

The program has 20 hours of general electives with the same communications and ethics requirements as in the proposed BA program.

The proposed business option, the proposed general BA program, and the current BA business option are given on the following sheets. Courses in the proposed business option in blue indicate the requirements in addition to those of in general BA program.

The proposed program consists of 187 credit hours. The course additions and modifications needed to support these changes have been submitted to UCAPC.

# **PROPOSED COMPUTER SCIENCE BACHELOR OF ARTS: BUSINESS OPTION (187 Hours)**

## **I. COMPUTER SCIENCE AND ENGINEERING COURSES (78 hours)**

### **A. Required Computer Science Courses (27 hours)**

CS 240 Computer Programming I	4
CS 241 Computer Programming II	4
CS 242 Computer Programming III	4
CS 302 Client Server Databases	4
CS 400 Data Structures and Algorithms	4
CS 415 Soc. Implications of Computing	3
CS 466 Formal Languages	4

### **B. Required Computer Engineering Courses (16 hours)**

CEG 233 Linux and Windows	4
CEG 320 Computer Organization	4
CEG 355 Information Tech Systems	4
CEG 460 Intro. to Software Engineering	4

### **C. CS/CEG Electives (32 hours)**

At least 16 hours must be at the 400 level.

### **D. Technical Communication (3 hours)**

EGR 335 Technical Communications	3
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## **II. GENERAL EDUCATION (48 hours)**

### **Area I- Communication and Mathematical Skills (8 hours)**

ENG 101 - Composition I	4
ENG 102 - Composition II	4
Mathematics ( <i>satisfied by Quantitative Reasoning section</i> )	

### **Area II – Cultural-Social Foundations (8 hours)**

4

### **Area III – Human Behavior (4 hours)**

Select One Course  
Political Science: PLS 200  
Psychology: PSY 105  
Sociology (WI): SOC 200, WMS 200  
*Additional Area III requirement satisfied by EC 204, EC 205 in Business Option courses*

### **Area IV – Human Expression (4 hours)**

### **Area V – Natural Science (12 hours)**

### **Additional courses from Areas II, III, and IV (8 hours)**

### **Area VI – College Component (4 hours)**

Select any Area VI College of Liberal Arts course.

## **III. QUANTITATIVE REASONING (17 hours)**

MTH 228 Calculus for Social Sciences	5
MTH 257 Discrete Mathematics	3
STT 160 Statistical Concepts	5
PHL 223 Symbolic Logic	4

## **IV. BUSINESS CONCENTRATION COURSES (24 hours)**

**Business Concentration Core (16 hours)**

EC204 Prin of Microeconomics	4
EC205 Prin of Macroeconomics	4
ACC 204 Accounting Principles I	4
ACC 205 Accounting Principles II	4

**Business Concentration Electives (8 hours)**

Select at least two additional business courses to complement the business option core courses.

**V. GENERAL ELECTIVES (20 HOURS)**

Must include at least two courses from COM 101, 203, 221 or PHL 124, 200, 211.

GENERAL EDUCATION: Courses must be chosen to satisfy the University General Education requirements.  
GENERAL ELECTIVES: Courses may be chosen from any area of study. .  
CS/CEG ELECTIVES: Courses from Computer Science or Computer Engineering to provide additional breadth in the discipline.  
ALL ELECTIVE COURSES MUST BE APPROVED BY A DEPARTMENT ADVISOR.

# **CURRENT COMPUTER SCIENCE BACHELOR OF ARTS: BUSINESS OPTION (200 Hours)**

## **I. GENERAL EDUCATION (48 Hrs)**

### **Area One – Communication & Mathematical Skills**

ENG 101 Composition I	4
ENG 102 Composition II	4
MATHEMATICS – see below	

### **Area Two – The Western Experience**

HST 101 Ancient and Medieval Eras	3
HST 102 Western World in Transition	3
HST 103 Modern Western World	3
Great Books of the Western World	3
Fine and Performing Arts	3

### **Area Three - The Nonwestern World**

Comparative Studies (CST)	3
Regional Studies (RST)	3

### **Area Four – Understanding the Contemporary World**

Natural Science – See PHYSICS below	
PSY 105 Psychology: Science of Behavior	4
SOC 200 Social Life	3
PLS 200 Political Life	3
EC 201 Introduction to Economics	3
EC 202 Microeconomics	3
EC 203 Macroeconomics	3

## **II. MAJOR COURSES**

### **A. Required Mathematics/Statistics Courses (24 Hours)**

132 Calculus I	5
133 Calculus II	5
253 Matrix Algebra	3
257 Discrete Mathematics	3
360 Applied Statistics I (STT)	4
361 Applied Statistics II (STT)	4

### **B. Required Physics Courses (15 Hours)**

111 Principles of Physics	4
101 Physics Lab	1
112 Principles of Physics	4
102 Physics Lab	1
113 Principles of Physics	4
103 Physics Lab	1

### **C. Required Comp Sci Courses (20 Hrs)**

141 Computer Programming I	4
142 Computer Programming II	4
146 Intro do Data Structures	4
400 Data Struc & Software Design	4
466 Intro to Formal Languages	4

**D. Required Computer Engineering Courses (20 Hours)**

260 Dig Comp Hard/Switch Circuits	4
320 Computer Organization	4
360 Digital System Design	4
430 Assembly Language Programming	4
431 Real Time Software Design	4

**E. CS/CEG Electives** (CS 316, 317, CS, CEG 400 level or above. Maximum 4 hours of programming workshops (24 hours)

**F. Required Language Courses (12 hours)**

**G. Required Second Concentration From Business (33 Hours)**

ACC 201 Accounting I
ACC 202 Accounting II
ACC 203 Accounting III
FIN 301 Business Finance I
FIN 302 Business Finance II
MGT 301 Principles of Management
MGT 302 Organizational Behavior
MKT 301 Principles of Marketing
MKT 302 Marketing Management
MS 203 Analytical Problem Solving
MS 341 Probabilistic Models



## **Minor in Computing and Information Technology**

Department of Computer Science and Engineering  
College of Engineering and Computer Science

(Minor number 448)

### **Objective**

The objective of the CIT minor is to satisfy the needs of the intelligent and responsible application of computing and information technologies to majors in fields which would not have Computer Science or Computing Engineering as their fundamental and exclusive basic orientation, but would want to benefit from the products of applications of the latter two disciplines and their proper use. The minor provides a conceptual foundation as well as a practical application of various Computing and Information Technology skills.

### **Admission requirements**

Students must have a 2.5 GPA or higher, or receive special permission for admission by petition.

### **Course Requirements**

A minimum of 28 QH, in the following five areas is required to complete the minor. Specific course options are shown on the attached checksheet.

Area 1: A computer literacy requirement – ~~4~~ quarter hours

Area 2: An introductory problem-solving sequence using computer programming – 8 quarter hours

Area 3: An object-oriented applications programming component – 4 quarter hours

Area 4: An introductory networking component – 4 quarter hours

Area 5: An introductory client-server database component – 4 quarter hours

Area 6: Elective – 4 quarter hours

Deleted: 8

Area 6 Elective must be selected from Computer Science or Computer Engineering courses and be approved by a department advisor.

### **Application Procedures**

Students should complete the University form "application for Entering a Dual Major/Double Degree Program or Adding a Minor" and send it to the Department of Computer Science and Engineering.

For more information on this minor call the Department of Computer Science and Engineering at (937)775-5131, or visit the Department in Room 303, Russ Engineering Center.

## I. BEACON: BSN Nursing Program, College of Nursing and Health

### II. Program Changes:

The Baccalaureate Entry Accelerates Career Opportunities in Nursing (BEACON) program provides an alternate pathway to the BSN degree for students with a baccalaureate degree in another field. The program was approved in 2004 and has graduated the first cohort in November, 2005. The program has been supported by a grant from HRSA through June, 2008.

The original BEACON credit hours for clinical courses were established on a higher ratio than the 2:1 clinical to credit ratio of the traditional BSN program. However, faculty who teach summer quarters are paid based on credit hours. Thus steps to make BEACON clinical courses align with the 2:1 clinical to credit ratio are necessary to assure that faculty who teach in this program after the grant support is finished are appropriately compensated concerning both workload throughout the academic year and pay for summer quarter. An overarching aim is for students to take a maximum of 18 credits/quarter and be able to complete the program of study in 5 consecutive quarters.

The following changes were approved by the CoNH Curriculum committee and are proposed with notations where some changes were approved last year by UCAPC:

1. Increase the credit hours of clinical courses where feasible to follow the undergraduate nursing 2:1 clinical hours to credit ratio in order to fairly compensate faculty for workload/summer salary.

NUR 441 maintain 9 (4L/5Cl) by decreasing clinical hours to 10 hrs/week to keep 18 maximum credits in this quarter.

NUR 442 increase from 11 to 12 (4L/8Cl) (this course was approved for change by UCAPC last year from 9 to 11)

NUR 443 Deactivate this course (content split into 2 new courses)

NUR 444 Deactivate this course (content split into 2 new courses)

Approve NUR 446, 447, 448, and 449 as new clinical courses (2L/4Cl)

NUR 445 Increase from 9 to 11 (3L/8Cl)

2. Decrease credits for BEACON Seminar courses to help offset increased credits in clinical courses.

NUR 451 is no longer part of the BEACON program of study, originally 2 credits, one credit was added to NUR 450 (changed from 2 to 3) and 1 credit added to NUR 441 (8 to 9). Changes approved last year by UCAPC

NUR 452 decrease from 2 to 1 credit (2 hour seminar each week).

NUR 453, 454, & 455 were decreased last year from 2 to 1 credit each. Changes approved last year by UCAPC.

**BEACON PROGRAM OF STUDY**  
Courses and Credit hours (with above revisions)

First Qtr.	Second Qtr.	Third Qtr.	Fourth Qtr.	Fifth Quarter
NUR 306 3	NUR 304 3	NUR 442 12	NUR 447 6	NUR 445 11
NUR 441 9	NUR 446 6	NUR 453 1	NUR 449 6	NUR 455 1
NUR 450 3	NUR 448 6	NUR 716 2	NUR 454 1	NUR 756 3
NUR 462 3	NUR 452 1	NUR 751 2	NUR 750 3	NUR 762 3
	NUR 755 2		NUR 763 2	or
				NUR 708 4
Total 18 cr.	Total 18 cr.	Total 17 cr.	Total 18 cr.	Total 18 or 19

**BEACON COURSE PREREQUISITES**

COURSE	PRE- or CO-REQUISITE
NUR 304	Admission to BEACON
NUR 306	Admission to BEACON
NUR 441	Admission to BEACON
NUR 442	NUR 306, 441, 450, 462
NUR 443 INACTIVE	N/A
NUR 444 INACTIVE	N/A
NUR 445	NUR 441, 442, 446, 447, 448, 449, 452, 453, 454
NUR 446	NUR 306, 441, 450, 462
NUR 447	NUR 306, 441, 450, 462
NUR 448	NUR 306, 441, 450, 462
NUR 449	NUR 306, 441, 450, 462
NUR 450	Admission to BEACON
NUR 451 INACTIVE	N/A
NUR 452	NUR 306, 441, 450, 462
NUR 453	NUR 452
NUR 454	NUR 453
NUR 455	NUR 441, 442, 446, 447, 448, 449, 454
NUR 462	Admission to BEACON
NUR 716	Graduate Permission
NUR 750	Graduate Permission
NUR 751	Graduate Permission
NUR 755	Graduate Permission
NUR 756	Graduate Permission
NUR 763	Graduate Permission
NUR 708 or NUR 762	Graduate Permission

Major Program: BEACON Bachelor of Science in Nursing  
Comparison of Original Program of Study, and Proposed Program of Study

BEACON Program of Study	Hours	Proposed BEACON Program of Study	Hours
Baccalaureate degree including the following pre-requisite courses: English composition Abnormal psychology Intro sociology Growth & development Organic chemistry Biology (if not in high school) Anatomy Physiology Microbiology Pharmacology Nutrition Statistics	138	Baccalaureate degree including the following pre-requisite courses: English composition Abnormal psychology Intro sociology Growth & development Organic chemistry Biology (if not in high school) Anatomy Physiology Microbiology Pharmacology Nutrition Statistics	138
Nursing Requirements: NUR 450 NUR 755 NUR 751 NUR 462 NUR 441, 451 NUR 442, 452 NUR 443, 453 NUR 444, 454 NUR 445, 455 NUR 716 NUR 750 NUR 756 NUR 763 NUR 762	82	Nursing Requirements NUR 450 NUR 755 NUR 751 NUR 462 NUR 441 (Inactivated 451) NUR 442, 452 (Inactivated 443 & 444) NUR 446*, 448*, 453 NUR 447*, 449*, 454 NUR 445, 455 NUR 716 NUR 750 NUR 756 NUR 763 NUR 762 or 708	90 or 91
Free Electives	0	Free Electives	0
Total	220		228 or 229
* Course Inventory Request forms and Syllabi are attached.			

### III. Transition Plan:

Students admitted to the BEACON BSN program take courses in a specified sequence of 5 quarters of full-time (18-19 credits/quarter) program of study. The change in program will be implemented with the cohort admitted in Fall 2006. No transition plan is needed.

### IV. Curriculum Coordination.

Since BEACON-BSN program is a post-baccalaureate program taught entirely in the Nursing department, no additional curriculum coordination is needed with other units on campus.

### V. Resource Coordination.

No change in resources will be required by the proposed changes to the BEACON BSN program.