PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE
(10000-40000 LEVEL)

DEPARTMENT: Computer Science
EFFECTIVE SESSION: Fall 2009

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

1. New course with supporting documents
2. Add existing course offered at another campus
3. Expiration of a course
4. Change in course number
5. Change in course title
6. Change in course credit type
7. Change in course attributes (department head signature only)
8. Change in instructional hours
9. Change in course description
10. Change in course requisites
11. Change in semesters offered (department head signature only)
12. Transfer from one department to another

PROPOSED:

<table>
<thead>
<tr>
<th>Subject Abbreviation</th>
<th>Course Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>221</td>
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</tbody>
</table>

Long Title: Introduction to C Programming
Short Title: Intro to C Prog

Abbreviated title will be entered by the Office of the Registrar if omitted. (20 characters only)

ÊCREDIT TYPE

<table>
<thead>
<tr>
<th>1. Fixed Credit: Cr. Hrs.</th>
<th>2. Variable Credit Range: Minimum Cr. Hrs</th>
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<tbody>
<tr>
<td></td>
<td>(Check One) To Maximum Cr. Hrs.</td>
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<tr>
<td></td>
<td>Maximum Cr. Hrs.</td>
</tr>
<tr>
<td>3. Equivalent Credit: Yes</td>
<td>No</td>
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COURSE ATTRIBUTES: Check All That Apply

<table>
<thead>
<tr>
<th>1. Pass/Not Pass Only</th>
<th>2. Satisfactory/Unsatisfactory Only</th>
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<tbody>
<tr>
<td>3. Repeatable</td>
<td>Maximum Repeatable Credit:</td>
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<tr>
<td>4. Credit by Examination</td>
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<tr>
<td>5. Special Fees</td>
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<tr>
<td>6. Registration Approval Type</td>
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<tr>
<td>Department</td>
<td>Instructor</td>
</tr>
<tr>
<td>7. Variable Title</td>
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<tr>
<td>8. Honors</td>
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<td>9. Full Time Privilege</td>
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<tr>
<td>10. Off Campus Experience</td>
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Schedule Type

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<tr>
<th>Lecture</th>
<th>Recitation</th>
<th>Presentation</th>
<th>Laboratory</th>
<th>Lab Prep</th>
<th>Studio</th>
<th>Distance</th>
<th>Clinic</th>
<th>Experiential</th>
<th>Research</th>
<th>Ind. Study</th>
<th>Pract/Observe</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Minutes Per Mth</th>
<th>Meetings Per Week</th>
<th>Weeks Offered</th>
<th>% of Credit Allocated</th>
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</thead>
<tbody>
<tr>
<td>75</td>
<td>2</td>
<td>11</td>
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COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

Introduction to programming in C to solve engineering problems. Topics covered include primitive data types, control structures, standard input/output, file input/output, mathematic library, procedural programming, problem-solving, user-defined functions, arrays, and pointers.

Prerequisites: ENGR 121 or consent of instructor

Calumet Department Head: [Signature] Date: 2/18/2009
Calumet School Dean: [Signature] Date: 2/19/09

Fort Wayne Department Head: [Signature] Date: [Signature] Date: 2/19/09

Indianspolis Department Head: [Signature] Date: [Signature] Date: 2/19/09

North Central Department Head: [Signature] Date: [Signature] Date: 2/19/09

West Lafayette Department Head: [Signature] Date: [Signature] Date: [Signature] Date: 2/19/09

OFFICE OF THE REGISTRAR
COURSE DESCRIPTION

Department and Course Number: CS 221
Course Coordinator: Dr. Beomjin Kim

Course Title: Introduction to C Programming
Total Credits: 2

Course Description:

Introduction to programming in C to solve engineering problems. Topics covered include primitive data types, control structures, standard input/output, file input/output, mathematic library, procedural programming, problem-solving, user-defined functions, arrays, and pointers.

Prerequisites:

ENGR 121 or consent of instructor

Course Goals & Course Learning Outcomes:

The goal of this course is to introduce to programming in C to solve engineering problems. Specific learning outcomes are listed below. The letters in parentheses refer to ABET Program Learning Outcomes. A student who successfully fulfills the course requirements will have demonstrated:

1. An ability to use C programming language to solve elementary engineering problems. (a, c, e, k)
2. An understanding of and an ability to use data types, variables, and arithmetic operators. (a, e)
3. An ability to use conditional statements and loops structures. (c, e, k)
4. An understanding of the use of arrays and pointers. (c, e, k)
5. An ability to develop function-oriented programs. (a, c, e, k)
6. An understanding of the distinction for passing arguments among functions. (c, k)
7. An ability to use standard input/output and file input/output operations. (c, e, k)
8. An understanding of the object-oriented programming. (c, k, j)

Level of the Course:

This course is intended for freshman or sophomore level undergraduate students majoring in Engineering, Science, and Technology.

Lecture:

Two 75 mins lectures per week for 11 weeks
Book

Textbook


Reference book


Course Outline

Week 1: Introduction, Definitions, C program development cycle, C program structure, Data types, Constants and variables

Week 2: Arithmetic operators, Standard Input/Output, Structured programming

Week 3: Conditional expressions, Selection statements, Loop structures

Week 4: File Input/Output, Mathematical functions, Procedural programming

Week 5: User-defined functions

Week 6: Arguments passing among functions, Midterm Examination

Week 7: Arrays and matrices

Week 8: Problem solving methodology

Week 9: Pointers

Week 10: Introduction to C++, Object-oriented programming

Week 11: Review & Final Examination