

**Section 1. Proposed Course Outline** (A general statement of course content that informs class syllabus construction. Once approved, all sections of a given course must include this content, no matter which instructor teaches the course, or the mode of delivery. Divisions must include this new course outline in the Divisional Course Outline binder as required by COPPs.)

Course Number: **CS234N** Full Course Title for print catalog: **Advanced Programming: C#**

Abbreviated Course Title for Banner: **Advanced Programming: CSharp** (30 character limit)

Prerequisites: CS 233 C#

Co-requisites:

Grade Option: [x]  Graded (with P/NP option)  [ ]  Pass/No Pass only

|  |  |  |  |
| --- | --- | --- | --- |
| **Number/Type Credits** | **Term Minimum Contact** | **Term Maximum Contact** | **11-Week Term Contact** |
| 2 Lecture | 20 hours (lecture credits x 10) | 24 hours (lecture credits x 12) | 22 hours (lecture credits x 11) |
| 1 Lec/Lab | 20 hours (lec-lab credits x 20) | 24 hours (lec-lab credits x 24) | 22 hours (lec-lab credits x 22) |
| 1 Lab | 30 hours (lab credits x 30) | 36 hours (lab credits x 36) | 33 hours (lab credits x 33) |
| 4 **Total credits (sum)** | 70 **Total hours (sum)** | 84 **Total hours (sum)** | 77 **Total hours (sum)** |

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| **Course Description (300 character limit):** |
| This is the third in a sequence of 3 courses that teaches students to develop desktop applications in the .NET environment. The course introduces advanced level programming concepts and skills and C# syntax. It allows students to develop more sophisticated object oriented, data driven desktop applications. |
| **Course Outcomes and Proficiencies** | **Assessments Planned** |
| What will the student ***know*** or ***be able to do*** at the end of the course?What ***attitudes*** related to the subject will the student hold? | What evidence will demonstrate that students have achieved course outcomes? (assessment tools may include departmental tests, written products, portfolios, juried performances, quizzes and exams, or alternative assessments such as qualitative studies, capstone projects, external reviewers, etc.) |
| **Upon successful completion of this course, the student will:** | **How each outcome will be assessed:** |
| Design, implement, test and debug systems of classes in C#. | Hands on activities. Small group activities. Quizzes. |
| Design, implement, test and debug advanced level object oriented programs in C#. | Hands on activities. Small group activities. Quizzes. |
| Design, implement, test and debug multi-form applications in C# | Hands on activities. Small group activities. Quizzes. |
| Design, implement, test and debug data driven applications in C#. | Hands on activities. Small group activities. Quizzes. |
| Describe programming concepts, themes and issues orally and in writing. | Small group activities. Quizzes. |
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|       |       |

**Course Content by Major Topics**What topics will be presented? What are the main activities of the course? What are the central themes?

(See sample at <http://www.lanecc.edu/cops/format3.htm>.)

**Topics:**

Review of concepts and skills from CS 233 C#

More complex classes in C#

 Inheritance

 Polymorphism, Interfaces and Operator Overloading

 Exception Handling

 Generics

 Delegates

 Lambda Functions

More complex user interfaces and event driven programs in C#

 More complex controls

 MDI interfaces, Menus and Toolbars

 Windows Presentation Foundation applications

 Windows 8 applications

Data driven applications

 Files and streams

XML and LINQ to XML

Databases and LINQ to SQL

**Section 2. Proposal Information**

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| --- | --- | --- |
| **Course Developer:** | **Type of Proposal** | **Type of Course:**  |
| Mari Good | [x]  New course | [x]  Lower Division Collegiate (transfer)  |
| Date: 1/8/2014 |  [ ]  Currently 199 or 299  | [ ]  Professional/Technical (required or elective)  |
| Catalog year to take effect:  | [ ]  Experimental Course | [ ]  Developmental, numbered below 100 |
| 2014-1015 |  [ ]  199 Special Studies |  |
|  |  [ ]  299 Trends  |  |
|  | [ ]  Revised course (If increasing credits, use credit change form) |
|  | [ ]  Reactivated course with no change |
|  | [ ]  Reactivated course with changes  |

**Rationale:**

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| How does this proposal further the goals of the program or department?  |
| This course is the third in a sequence of courses that provide web programming students with an introduction to programming in the .NET environment. It supports the departmental intention to revitalize the Web Programming degree. It also supports the departmental development of courses for the new Health Informatics degree and the GIS certificate. |
| What assessment evidence supports this proposal?  |
| Discussions with CIT advisory committee members and employers in the community indicate a need for a stronger programming strand in the Web Programming degree. Programming in the .NET environment allows web programming students to program for the desktop and for the web using ONE programming language. This is the third of 5 required C# courses in the web programming degree.  |
| How do you know there is a demand for this course?  |
| The course is required in the Web Programming degree. It is one of the programming courses that can be used by students in the HIT degree and GIS certificates. It is an appropriate elective for students in the Gaming and Network degrees. |

**Section 3. Curriculum Equity (**[**http://www.lanecc.edu/cops/curric.htm**](http://www.lanecc.edu/cops/curric.htm)**)**

**To promote an environment where all learners are encouraged to develop their full potential, this course will support Lane’s Curriculum Equity policy in the following way(s):**

Computer related fields are, in general, white male dominated. The CIT department attempts to counteract the gender inequity by co-sponsoring a monthly professional meeting, Women in Information Technology, with the Women’s Center. Every attempt is made to teach individual courses in a way that encourages all students.

**Section 4. For revised courses only: PREVIOUS Catalog/Course Information:**

Course Number: Course Title in Banner: (30 characters maximum)

Full Course Title in print catalog:

Prerequisites:

Co-requisites:

Grade Option: [ ]  Graded (with P/NP option) [ ]  Pass/No Pass only

|  |  |  |  |
| --- | --- | --- | --- |
| **Number/Type Credits** | **Term Minimum Contact** | **Term Maximum Contact** | **11-Week Term Contact** |
|    Lecture |    hours (lecture credits x 10) |    hours (lecture credits x 12) |    hours (lecture credits x 11) |
|    Lec/Lab |    hours (lec-lab credits x 20) |    hours (lec-lab credits x 24) |    hours (lec-lab credits x 22) |
|    Lab |    hours (lab credits x 30) |    hours (lab credits x 36) |    hours (lab credits x 33) |
|    **Total credits (sum)** |     **Total hours (sum)** |     **Total hours (sum)** |     **Total hours (sum)** |

**Course Description:**

What will change? [ ] Course Number [ ] Title [ ] Course Description [ ] Credit hours [ ] Contact hours

**Section 5. Support Courses (New Professional/Technical course proposals must complete.)**

Professional/Technical courses are tracked within programs for purposes of Carl Perkins funding and budgetary planning. Indicate all degree or certificate programs for which this course will be required.

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| --- | --- |
| Program | Division |
| Web Programming | CIT |
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**Section 6. Overlap Courses (New course proposals must complete.)**

While overlap of course materials is not necessarily a flaw, duplication of course materials may lead to inefficient use of college resources. If there is overlap, the faculty of overlapping courses must agree on the extent of overlap and attach a rationale explaining its necessity.

Indicate all departments/courses that this course may overlap. Division Dean of existing course enters one of three options at right. Note: N/A is not an option.

Options:

1. Approved: course does not overlap.

2. Approved: overlap is acceptable. Rationale attached.

3. Disapproved: reasons attached.

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| --- | --- | --- | --- | --- | --- |
| Division | Course Number / Title | % Overlap | Option | Division Dean of existing course(Signature required for all options) | Date |
| none |  |  |  |  |  |
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**Section 7. Qualification to fulfill degree requirements** (complete all relevant forms, available at <http://www.lanecc.edu/currsched/drrcforms.htm>, and send to Mary Brau for the Degree Requirements Review Committee):

[ ]  Form(s) applying for the following degree requirement status have been attached. (Only check this box when forms have been completed and attached.)

**AAOT, ASOT-Bus, OTM:**

[ ]  Arts & Letters

[ ]  Social Sciences

[ ]  Science / Mathematics / Computer Science

**AAOT:**

[ ]  Ethnic/Gender/Cultural Diversity

**AAS, 1-year and 2-year certificates:**

[ ]  Human Relations

**Section 8. Library Impact Statement**

Under accreditation standards, Library consultation is essential for new programs, new courses and for substantively revised courses when the revisions entail any change in library use.

**What assignments will require the use of library and information resources?**

This course involved numerous lab activities in which students access the internet and other information resources to supplement the text for the course.

Each academic area has a Liaison Librarian (<http://www.lanecc.edu/library/services/liaison.htm>). Contact the designated librarian to discuss the library needs of your course. Please allow the librarian at least one week to assess library resources.

**To be completed by Liaison Librarian:**

[ ]  Library resources are adequate to support this proposal.

[ ]  Additional resources are needed but can be obtained from current funds.

[ ]  Significant additional Library funds/resources are required to support this proposal.

 Liaison Librarian Date

**Section 9. Divisional Approval** (To be completed by Division Chair and Administrative Assistant)

**Human, Physical, and Financial Resources:**

[ ]  Additional instructional costs (staff, materials, services or facilities) will be incurred to offer this course. Source of funding:

[x]  No additional instructional resources (staff, materials, services or facilities) are needed to offer this course.
Explain: Tuition will pay for it.

**Required Certifications:**

[x]  We have developed minimum course certification standards according to the COPPs procedure “Instructor Qualifications: Credit,” to be filed with OISS upon course approval.

[x]  We have completed faculty certification form(s) for faculty qualified to teach this course, to be filed with OISS and Human Resources upon course approval.

Administrative Assistant/Coordinator Date

**Fees:**

[x]  We have completed fee rationale and fee request forms to be submitted to OISS upon course approval, in compliance with the COPPs procedure, “Fees: Special”

[ ]  No special fees will be required for this course.

**Divisional Recommendation:**

[x]  The Division Chair and Administrative Assistant have reviewed this course proposal and kept a copy for divisional files.

[ ]  Faculty review of this course was completed within the division on      (date).

[ ]  Pass [ ]  Do Not Pass

Division Dean Date

**Section 10. College Approval**

Curriculum Committee Chair Date Executive Dean Date

Curriculum Approval

Committee hearing:

 Date Vice President, Academic Affairs, Chief Academic Officer Date