



Application for Offering a Course Using a Distance Education Format

1. Course Prefix and Number: **CS 215**

Course Title: **Introduction to Program Design, Abstraction, and Problem Solving**

Course Description: This course teaches introductory object-oriented problem solving, design, and programming engineering. An equally balanced effort will be devoted to the three main threads in the course: concepts, programming language skills, and rudiments of object-oriented programming and software engineering.

Course Objectives/Competencies:

The students will learn basic data types, data structures and basic algorithm design and analysis techniques including recursion. Programming skills in an object-oriented programming language will be substantially improved with respect to CS 115. The students will also become familiar with basic software engineering methodology.

- **Concepts**

- Students will be *proficient* in the following areas:

- dynamic vs. static memory management
- intermediate data structures, such as linked lists, stacks, queues, and trees
- rudiments of algorithm run-time analysis (Big-O notation)
- object oriented approach to programming

- Students will be *familiar* with the following:

- more powerful sorting techniques (merge sort, quick sort, and heap sort)
- more powerful searching techniques (binary search trees and hashing)

- **Programming Languages**

- Students will be *proficient* in the following:

- language constructs not covered in CS 115 (e.g., pointers, dynamic arrays, templates)
- language constructs that support data abstraction with an emphasis on object-oriented design rather than procedural design

- language constructs that support algorithm design, such as recursive vs. iterative methods to designing algorithms
- **Rudiments of Software Engineering**
 - Students will be *proficient* with the following issues
 - determining specifications for a problem
 - designing a solution
 - efficient testing and debugging skills
 - analysis of an implementation

2. Effective date (semester and year): First Summer Session, 2004

3. Describe the type of distance learning delivery method to be used.

This course will be taught via the Internet.

4. Describe how the course will achieve, in new ways, the same learning outcomes as when the course is taught by traditional delivery methods.

This course will be taught as a web-based distance course, using an online course management system. Traditional features such as homework assignments and exams will be supplemented with online chats, threaded discussions, and web-based content delivery. Attendance at an orientation session and other “live” events may be required and will be listed in the course syllabus. Submission of assignments via email or a course management system drop box may also be required. If the course has a lab component, completion of lab assignments may require attendance onsite at LCC or other facilities.

5. Describe the availability of related services such as labs, library, research, and supplemental information.

Students have access to library research materials via the web, including Kentucky Virtual Library databases and other library databases. Students have access to traditional print research materials in local public libraries and via interlibrary loan.

6. For web courses: Describe how ADA compliance has been assessed to ensure accessibility of course content for students with disabilities.

The course will be screened for ADA compliance using the accessibility guidelines and/or tools at LCC’s Wider World Web site. Screening will take place before the course is listed in the printed or online schedule of classes.

7. Describe how appropriate levels of faculty-student and student-student interaction will be achieved.

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Students may interact with the instructor via e-mail, telephone, fax, and student-faculty threaded discussions. Students may interact with each other via e-mail, telephone, fax, threaded discussions and web-based chat. Participation in threaded discussions may be required.

8. Describe any technical requirements for remote sites (ITV, computer hardware/software, and special equipment).

Technical requirements for web server space and the course management system are met. Specific technical requirements for students accessing the Kentucky Virtual University may be found at their web site. If needed, requirements for completion of lab assignments will be listed in the course syllabus.

9. Within the department, who should be contacted for further information about the proposed course:

Name: James Kolasa

Phone: 859.257.4872x4013

Email: jkolasa@uky.edu

**Signatures of Approval
for
Internal LCC Proposals**

Program/Area:

Computer Information Systems

Program/Area Coordinator:

Shawn Pagan

Date: 3/11/04

Division:

Behavioral Sciences and Information Systems Technologies

Division Program Development Committee Chair:

Anthony Rorr

Date: 2/20/04

Division Chair:

Debbie Holt

Date: 3/11/04

Academic Council for Lexington Community College Chair:

Janet

Date: 4-21-04

This form is applicable for proposals that do not have to be submitted to the UK Senate.
Examples include but are not limited to the following:

- Application for Removal from General Education List
- Application for Inclusion on General Education List
- Addition to, Change in, or Deletion from *Lexington Community College Credit for External Experiences Manual*
- Application for Offering a Course Using a Distance Education Format



ACADEMIC COUNCIL
FOR
LEXINGTON COMMUNITY COLLEGE

PROPOSAL CHECKLIST

<u>Initial</u>	<u>Date</u>	
<u>JK</u>	_____	<u>Faculty Member</u> Prepares proposal
<u>JK</u>	_____	Obtains approval from program/area faculty and signature of program/area coordinator
<u>JK</u>	_____	Submits form to Academic Affairs and division Program Development Committee
<u>JK</u>	_____	Forwards proposal to appropriate KCTCS program development contact
<u>AD</u>	2/13/04	<u>Division Program Development Committee Chair</u> Calls meeting of committee
<u>AD</u>	2/20/04	Conducts vote on approval of proposal
<u>AD</u>	2/26/04	Signs proposal form and forwards proposal to Division Chair if committee approves proposal, or sends proposal back to faculty member with suggestions if committee does not approve proposal
<u>DK</u>	2/20/04	<u>Division Chair</u> Places proposal on division meeting agenda
<u>DK</u>	2/27/04	Conducts vote on approval of proposal
<u>DK</u>	3/10/04	Signs proposal form and forwards proposal to Academic Council Chair if division approves proposal, or sends proposal back to faculty member with suggestions if division does not approve proposal
_____	_____	<u>Academic Council Chair</u> Places proposal on Academic Council meeting agenda when required materials are received by deadline
_____	_____	Circulates proposal to College faculty
_____	_____	Assigns primary reviewer for proposal
_____	_____	Invites faculty member responsible for proposal to Academic Council meeting
_____	_____	Sends proposal to Academic Council members
_____	_____	Conducts vote on approval of proposal
_____	_____	Signs proposal form if approved
_____	_____	Forwards proposal to the UK Senate Council and UK Registrar if Academic Council approves proposal, or sends proposal back to faculty member with suggestions if Academic Council does not approve proposal

Notes:

- This checklist is applicable for all program and curriculum proposals.
- After Academic Council approval, the faculty member submitting proposal is responsible for making any requested changes and submitting revised form to the Academic Council recording secretary within one week.
- To ensure implementation for the following Summer session and Fall semester, proposals should be approved by Academic Council no later than the December meeting.
- To ensure implementation for the following Spring semester, proposals should be approved by Academic Council no later than the May meeting.
- Agenda items for Academic Council meetings are due by the 15th of the preceding month in order to be considered.
- For more information, consult the Academic Council web page at <http://www.uky.edu/LCC/PRES/AcademicCouncil/academicCouncil.html>.