

DOCUMENT N: COURSE AND PROGRAM DEVELOPMENT COVER SHEET

Instruction: See Course and Program Development Policy and Procedures

SHORT TITLE OF PROPOSAL: C++ for Interactive Design

COURSE # 315

2050 315

Box 1: TYPE OF ACTION	ADD(NEW) <input checked="" type="checkbox"/>	DEACTIVATE <input type="checkbox"/>	MODIFY <input type="checkbox"/>	OTHER <input type="checkbox"/>
Box 2: LEVEL OF ACTION	Non-Credit <input type="checkbox"/>	Undergraduate <input checked="" type="checkbox"/>	Graduate <input type="checkbox"/>	OTHER <input type="checkbox"/>

Box 3: ITEM OF ACTION (check appropriate boxes)		APPROVAL SEQUENCE (see box 4 below)	DOCUMENTS REQUIRED (see box 5 on back)	INFO COPIES (see 2 on back)
<input type="checkbox"/>	1 Experimental Course ¹	AC	NOP	
<input type="checkbox"/>	2 Course Title	ABCD	NO	
<input type="checkbox"/>	3 Course Credits	ABCD	NO	
<input type="checkbox"/>	4 Course Number	ABCD	NO	
<input type="checkbox"/>	5 Course Level	ABCD	NO	
<input type="checkbox"/>	6 Deactivate a Course	ABCDEF	NO	a, b
<input type="checkbox"/>	7 Pre & Co-Requisite	ABCD	NO	a, b
<input type="checkbox"/>	8 Course Content	ABCD	NOP	a, b
<input checked="" type="checkbox"/>	9 New Course	ABCDEF	NOFQ	a, b
<input type="checkbox"/>	10a Certificate Program (ug/g) exclusively within existing degree program	ABCDEFHJL	NOQ	a, b, d
<input type="checkbox"/>	10b Certificate Program (ug/g) where degree programs do not exist or where courses are selected across degree programs (12 or more credits)	ABCDEFHIK	NOSR, 6	a, b, d
<input type="checkbox"/>	11a UG Concentration (exceeds 24 credit hours)	ABCDEFGHIK	NO, 5	a, b, d
<input type="checkbox"/>	11b Masters Concentration (exceeds 12 credit hours)	ABCDEFGHIK	NO, 5	a, b, d
<input type="checkbox"/>	11c Doctoral Concentration (exceeds 18 credit hours)	ABCDEFGHIK	NO, 5	a, b, d
<input type="checkbox"/>	12 Program Requirements	ABCDEF	NO	a, b, d
<input type="checkbox"/>	13 Program Title	ABCDEFGHIK	NO, 5	a, b, c, d
<input type="checkbox"/>	14 Off-Campus Deliver of Existing Program	ABCDEFHJK	NO, 4	a, b, c, d
<input type="checkbox"/>	15 Closed Site Program	ABCDJL	NOT	a, b
<input type="checkbox"/>	16 Program Suspension ⁹	ABCDEGJL	NOQ	a, b, c, d
<input type="checkbox"/>	17 Program Termination	ABCDEFHJL	NO, 10	a, b, c, d
<input type="checkbox"/>	18 Degree Program	ABCDEFGHIK	NOQRS, 3,8	a, b, c, d
<input type="checkbox"/>	19 New Center	ABCDEFH		
<input type="checkbox"/>	20 Other	Varies	Varies	Varies

Box 4: APPROVAL SEQUENCE	APPROVAL SIGNATURES	DATE
A Department	Chair: <i>Nancy Jager</i>	<i>Nov. 2, 2005</i>
B Final faculty review body within each school	Chair: <i>Margaret J. Potthack</i>	<i>12-14-05</i>
C College Dean	Dean: <i>Felix W. Th...</i>	<i>12/19/05</i>
D Provost and Senior Vice President for Academic Affairs	Provost:: <i>[Signature]</i>	<i>1/5/06</i>
E Curriculum Review Committee (UFS subcommittee)	Chair: <i>[Signature]</i>	<i>1/11/06</i>
F University Faculty Senate	Chair:	
G University Council ¹¹	Chair:	
H President	President::	
I Board of Regents – approval		
J Board of Regents – notification only		
K MHEC – approval		
L MHEC – notification only		
M Middle States Association notification	Required only if the mission of the University is changed by the action	

Box 5: DOCUMENTATION (check boxes of documents included)					
<input checked="" type="checkbox"/>	N. This Cover Sheet	<input checked="" type="checkbox"/>	Q. Full Description/Rationale	<input type="checkbox"/>	T. Contract
<input checked="" type="checkbox"/>	O. Summary Proposal	<input type="checkbox"/>	R. Full 5-page MHEC Proposal	<input type="checkbox"/>	U. Other
<input checked="" type="checkbox"/>	P. Syllabus	<input type="checkbox"/>	S. Financial Tables		

1. Approval automatically lapses after two offerings unless permanently approved by Action 9
2. Codes: a) Director of Library Services (Langsdale or Law) b) College Dean c) Planning Office d) EMSA
3. Letter of Intent is required by USM at least 30 days before a full proposal can be submitted. Letter of Intent requires only the approval of the dean and the provost and is forwarded to USM by the Office of the Provost.
4. One-page letter to include: Program title & degree/certificate to be awarded; resources requirements; need and demand; similar programs; method of instruction; and oversight and student services *
5. One-page letter with description and rationale *
6. One or two-page document that describes: centrality to mission; market demand; curriculum design; adequacy of faculty resources; and assurance program will be supported with existing resources. *
7. Learning objectives, assessment strategies; fit with UB strategic plan
8. Joint Degree Program or Primary Degree Programs require submission of MOU w/ program proposal
9. Temporary suspension of program to examine future direction; time not to exceed two years. No new students admitted during suspension, but currently enrolled students must be given opportunity to satisfy degree requirements.
10. Provide:
 - a. evidence that the action is consistent with UB mission and can be implemented within the existing program resources of the institution.
 - b. proposed date after which no new students will be admitted into the program;
 - c. accommodation of currently enrolled students in the realization of their degree objectives;
 - d. treatment of all tenured and non-tenured faculty and other staff in the affected program;
 - e. reallocation of funds from the budget of the affected program; and
 - f. existence at other state public institutions of programs to which to redirect students who might have enrolled in the program proposed for abolition.
11. University Council *review* (for a recommendation to the President or back to the Provost) shall be limited to curricular or academic policy issues that may potentially affect the University's mission and strategic planning, or have a significant impact on the generation or allocation of its financial resources.

* Required by MHEC

DOCUMENT O – SUMMARY PROPOSAL

College: Liberal Arts	Department: Information Arts and Technologies	Cost Code:
Contact Person: Kathleen Harmeyer	Phone: 5473	Effective Semester: Fall, 2006

O-1: Briefly describe what is requested:
Create new course in the SDE BTPS program.

For new courses or changes in existing courses (needed by Registrar):

New Title: C++ for Interactive Design	Title #: 315	Credits: 3
Course Abbreviation: C++ Inter Des		
Old Title:	Title #:	Credits:

O-2: Set forth the rationale for the proposal:
Students may arrive at UB without a beginning course in computer programming. It is essential for students seeking a career in game development to possess this skill. Language in the International Game Developer's Association Curriculum Framework supports this need. It reports that developers need "aspects of traditional Computer Science - modified to address the technical aspects of gaming." At this time the preferred programming language for developers is C++

O-3 Resources Needed:
No additional resources are required to support this proposal.


	Personnel	Equipment	Expendables	Facility Costs	TOTAL COSTS
Start-up First Year	\$	\$	\$	\$	\$
Annual Thereafter	\$	\$	\$	\$	\$

Indicate probable source of additional funds, if needed:

O-4 Impact including OTS and Library resources (Complete a or b)

a) Impact was reviewed. All impacted units were contacted and understandings worked out. No unit objects to the proposal as currently submitted. The units contacted were:

Langsdale and OTS


 Department Chair Signature

November 5, 2005
 Date

b) Impact was reviewed. All objections were worked out except those documented in attachments. Units contacted were:

Department Chair Signature

Date

DOCUMENT P – COURSE SYLLABUS

Date prepared: 11/19/2005
Prepared by: Kathleen Harmeyer
Department: Information Arts and Technologies
Course Number: COSC 315
Course Title: C++ for Interactive Design
Credit Hours: 3.0
Prerequisites: College Algebra
Catalog Description: This course includes an introduction to object oriented computer programming framed in the technical aspects of game programming. It covers variables, control structures, functions, arrays, data types, classes, inheritance and polymorphisms. Students will apply these concepts to build a series of small games.
Class Size: 24
Content Outline:

1. Mathematics of Computers,
 - a. Variables, Constants, and Data Types
 - b. Expressions and Assignments
 - c. Input and Output with C++
2. Control Structures in C++
 - a. Conditionals
 - b. Loops
 - c. Random Numbers in a Game Context
3. Strings, Arrays, and Objects
 - a. Strings as Game Data
 - b. Arrays as Game Controllers
 - c. Objects, Methods, and Properties
4. Standard Template Library
 - a. Vectors
 - b. Iterators
5. Game Analysis and Design
 - a. Objectives
 - b. Rules
 - c. Specification Design
 - d. Algorithm Development
 - e. Functional Design
 - f. Top-Down Approach
6. Functions
 - a. Parameters, References, and Returns
 - b. Global versus Local Variables
 - c. Overloading and Inlining Functions
7. Pointers
8. Classes
 - a. Constructors
 - b. Static Data Members
 - c. Member Functions
 - d. Aggregation

DOCUMENT P – COURSE SYLLABUS

- e. Dynamic Memory Allocation
- f. Data Members and the Heap
- g. Inheritance and Polymorphism

Learning Goals: Students will be able to apply object oriented computer programming framed in the technical aspects of game programming to the design and development of simple computer games.

Assessment Strategies:

1. Development of small and large scale game projects using object oriented computer programming
2. Midterm and final examinations

Required Text: Dawson, Michael. *Beginning C++ Game Programming*. Thompson. 2004. ISBN: 1-59200-205-6

COURSE FEE: LAB FEE REQUIRED

DOCUMENT Q: FULL DESCRIPTION/RATIONALE

C++ for Interactive Design

This course includes an introduction to object oriented computer programming framed in the technical aspects of game programming. It covers variables, control structures, functions, arrays, data types, classes, inheritance and polymorphisms. Students will apply these concepts to build a series of small games.

The International Game Developers Association, the premier professional organization for those employed in the computer game industry, has published a framework for developing curriculum in game related academic programs.¹ This document, prepared by a joint collaboration with industry specialists and academic curriculum developers, details content for courses and capabilities desired in graduates of a game studies bachelors' degree. One of the specific areas of content is computer programming.

Students may arrive at UB without a beginning course in computer programming. It is essential for students seeking a career in game development to possess this skill. Language in the International Game Developer's Association Curriculum Framework supports this need. It reports that developers need "aspects of traditional Computer Science - modified to address the technical aspects of gaming." At this time the preferred programming language for developers is C++

At the end of this course, students will be able to apply object oriented computer programming framed in the technical aspects of game programming to the design and development of simple computer games. To accomplish this they will develop small and large scale game projects using object oriented computer programming.

¹ Church, Doug, et. al. "IGDA Curriculum Framework, the Study of Games and Game Development." Hypertext reference: www.igda.org/academia/IGDA_Curriculum_Framework_Feb03.pdf. Version 2.3. 2003.