PROPOSAL TITLE: [PROPOSAL TITLE]

Sponsor: [SPONSOR'S NAME]
DEPARTMENT: [DEPARTMENT NAME]
COLLEGE: [COLLEGE NAME]

If Liberal Arts & Sciences: ___ History Humanities ___ Math Sciences ___ Social/Behavioral Sciences

___ UNDERGRADUATE ___ GRADUATE

THE ATTACHED NON-GEN-ED PROPOSAL IS BEST DESCRIBED BY THE ITEMS CHECKED

___ New non-gen ed course ___ Minor curriculum changes to 3 or fewer man hours
___ Subtract non-gen ed course ___ Existing non-gen ed course
___ New professional degree requirements ___ Major
___ Minor specialization concentration track ___ Certificate program

THE FOLLOWING SIGNATURES REPRESENT APPROVAL

Department Chair: [SIGNATURE] [DATE]
Department Curriculum Chair: [SIGNATURE] [DATE]
Academic Dean: [SIGNATURE] [DATE]

COLLEGE CURRICULUM COMMITTEE

OPEN HEARING: Date [DATE]
Approved ___ Not Approved ___

COLLEGE CURRICULUM CHAIR: [SIGNATURE] [DATE]
Senate Curriculum Chair Signature: [SIGNATURE] [DATE]
Announcement Date: [DATE]

EXECUTIVE VICE PRESIDENT/PROVOST Signature: [SIGNATURE] [DATE]

REGISTRAR: [SIGNATURE] [DATE]

NOTIFICATION FORWARD

[CHECKED Items]

TM 2/1/05 DBE
Proposal For A New Non-General Education Course:

C++ for Java Programmers

1. Details

a. **Course Title:** C++ for Java Programmers
b. **Sponsors:** Adrian Rusu and Jennifer Kay, Computer Science Department, Rowan University.
c. **Semester hours:** 1
d. **Course Level:** Undergraduate, [Freshman/Sophomore Level]
e. **Prerequisites:** Introduction to Object Oriented Programming (0704.113), or equivalent background in object-oriented programming
f. **Suggested Time and Scale of Implementation:** This course is to be offered every semester, and possibly in the summer.

2. Curricular Effect

This course will not be required for students in the CS major; it may be taken as a free elective.

- **Offerings:** No class will be dropped as a result of this course.
- **Adequacy of Resources:** No additional resources will be needed. The current computing resources are adequate to implement the proposed course.
- **Recommended Library Resources:** Additional books on C++ will be ordered for the library.
- **Short-term Evaluation:** We hope to offer this course in Fall ’06, at which time a short-term evaluation will be provided.

3. Rationale

Our curriculum is changing from a C++ based curriculum to a Java based curriculum. This means that all the introductory courses for computer science majors, and other courses such as Data Structures, Analysis of Algorithms, Operating Systems, Compiler Design, etc. which need to use a language to express concepts will be using Java rather than C++ to express those concepts. However, it does not mean that students will be required to write all of their programs in Java in all their advanced computer science courses. Different programming languages have different features, and while most programs can be written in any language, some languages include features that might make the program simpler or clearer. Furthermore, C++ is used on a larger scale than Java in industry.
Our transition from C++ to Java was motivated by several factors:
1. Java is easier to learn and use than C++ for the concepts of computer science
2. Most other B.S. programs in the U.S. have switched, or are switching, to Java
3. ETS has changed the AP course to a Java based course, and we wish to make the transition to Rowan easier for our transfer students.

After this transition period (and perhaps during this period) there will be a number of current students, as well as transfer students, who began their study of computer science with Java and will want to learn the details of C++ in order to use this language in the advanced courses, or to be more competitive in the real-world. The syntax of C++ is similar to the syntax of Java, and thus a 1-credit course should be sufficient for those students who have an adequate background.

4. Essence of the Course

- **Objectives in Relation to Student Outcomes:** Students taking this course will already have the ability to write programs in an object-oriented language such as Java. It will be assumed that they can not only use, but also design, classes appropriately. Students will write several programs in C++ to demonstrate knowledge of the syntax and semantics of C++. They will demonstrate knowledge of pointers, inheritance, encapsulation, and polymorphism, as expressed in C++. The programs they write will reflect knowledge of the topics shown below.

a. **Topical Outline/Content:**
- Primitive Data Types
- Control Structures
- Methods (functions)
  - Function Prototypes
  - Call by Value and Call by Reference
  - Function Overloading
  - Function Template
- Classes
  - Constructors
  - Destructors
  - Parameterized Constructors
  - Encapsulation
  - Inheritance
  - Polymorphism
- File Processing
- Pointers
  - Pointers and Arrays
  - Passing an Array to a Procedure
  - Pointers and Classes
• GUI Programming

b. **Evaluation of students and grading procedure**: Students will be evaluated on the basis of functional, correctly working programs, quizzes, and exams.

c. **Course Evaluation**: This course will be evaluated through student surveys, as well as by the Computer Science Accreditation Commission when our major is to be re-evaluated in 2006.

5. **Consultations**

   a. Bob Fleming, Management & M.I.S.
   b. Shreekanth Mandayam, Electrical & Computer Engineering
   c. Ron Czochor, Mathematics
The purpose of this form is to provide a channel of communication between the library and faculty, changing and designing new courses/programs. The information will be used to assess the resources available in the library and to identify resources the library should acquire to support the course program. The information will also provide rationale for institutional support for library acquisitions. This form should be completed in a coordinated effort between the course sponsor and the academic department as a librarian. THIS FORM MUST BE COMPLETED FOR ALL CURRICULUM PROPOSALS.

- The sponsor is complete parts A & B
  Assistance is required to complete parts A & B; please notify the liaison librarian.

- Forward this form to the librarian who will complete parts C, D & E

This form must be completed and attached to the original curriculum proposal before being approved by the Senate Curriculum Committee.

A. College: LAS
   Department: COMPUTER SCIENCE

   Proposed by: SCHMIDT KAT
   Date: 10/01/2006

   Course Title: C++ FOR BUSINESS PROGRAMMERS

   Anticipated Date for Course/Program Offering: FALL 2006

B. List specific resources that should be acquired to support this course:
   NONE

C. Describe the resources available in the library to support this course/program, including reference, monographic, electronic databases, audio-visual materials, etc. A summary statement is sufficient: The following books in C++ library include:

   C++ Reference

   Standard Approach

   C++ Compiling Languages

   Structured C++

   C++ How To: Writing Modern Code

   and many other books on this topic.

D. List key periodicals available in the library to support this course/program:
   NONE

E. Librarian comments and recommendations:

   [Signature]

Name: LIBRARY LIAISON

[Signature] Librarian Signature
September 26, 2004

Professor Adrian Rusu
Computer Science Department
Rowan University
Glassboro, NJ 08028

Re: C++ for Java Programmers

Dear Professor Rusu:

The Electrical & Computer Engineering department has received your course proposal entitled “C++ Java Programmers.” We have reviewed the rationale, curricular effect and proposed course content and are pleased to support this course offering.

Best wishes,

[Signature]

Shreekanth Mandayam, Ph.D.
Associate Professor
ECE Curriculum Committee Chair

Cc: Dr. Jennifer Kay, Chair, CS
    Dr. John Schmalzel, Chair, ECE
Jennifer Kay, Chair
Rowan University

Email: kay@elvis.rowan.edu
Computer Science Department
201 Mullica Hill Road
Glassboro, NJ 08028

Voice: 856-256-4806
Fax: 856-256-4741
Web: http://www.rowan.edu/~kay/
From: "Ronald Czochor" <Czochor@rowan.edu>
To: <rusu@rowan.edu>
Date: 9/21/04 11:34AM
Subject: Re: New CS Course Proposal

Adrian,

I have reviewed your course proposal for C++ for JAVA Programmers and I see no concern about this proposal from the point of view of the Mathematics Department.

Ron Czochor, Chairman
Mathematics Department
Rowan University
Phone: 856.256.4845
Fax 856.256.4816
Webpage: http://www.rowan.edu/mars/depts/math/czochor/Homepage/homepage.htm
Dept. webpage: http://www.rowan.edu/mars/depts/math/

>>> "Adrian Rusu" <rusu@rowan.edu> 8/25/2004 10:47:51 PM >>>
Dear Dr. Czochor,

Me and Dr. Kay, both from CS department, have put together a proposal for a new 1-credit non-general education course, called C++ for Java Programmers.

We would appreciate if you could send us your comments on this proposal.

Thank you for your collaboration,

Adrian Rusu, Ph.D.
Assistant Professor
Department of Computer Science
Rowan University
201 Mullica Hill Road
Glassboro, NJ 08028-1701
Phone: 856-256-4500 x3884
Email: rusu@rowan.edu
HTTP: http://elvis.rowan.edu/~rusu
6. **Catalog Description**

0704.109 (Suggested hegis number)  
**C++ for Java Programmers**  

(Prerequisite: 0704.113, or equivalent experience)

This course is designed for students who have substantial programming experience in an object-oriented language such as Java, but who wish to learn C++, a language that is still commonly used in research and industry. Students will study the syntax and semantics of C++, pointers, classes (inheritance, encapsulation, polymorphism, methods, etc.), control structures, file processing, and GUI programming.