

Rowan University
Computer Science Department

Proposal For A New Non-General Education Course: Power Java

1. Details

a. Course Title

0704.327 Power Java

b. Sponsor

Stephen J. Hartley and the Computer Science Department. The primary sponsor will be responsible for administration of the course.

c. Semester Hours

3 semester hours.

d. Course Level

Junior (300 level). General Education designation is not sought.

e. Prerequisites

C- or better in 0704.222 Data Structures and Algorithms

f. Time and Scale of Implementation

Available every other year starting in the 2005–2006 academic year.

2. Curricular Effect

The proposed course will be added to the “Restricted Electives” bank of the computer science major and minor, increasing the number and variety of those electives. We hope this will entice more students to major or minor in computer science.

No course will be deleted from the curriculum as a result of adding this course. No changes in faculty loads are anticipated. The enrollments in other advanced electives might decrease as a result of adding this course; however, this is outweighed by the positives of increasing the number and variety of electives available.

The proposed course will also be added to the Information Technology specialization.

a. Adequacy of Resources

The current staff of the Computer Science department and available computing resources are adequate to implement the proposed course.

b. Recommended Library Resources

Library resources need to include many advanced Java books, of which hundreds are available. The sponsor will work with the library to purchase a satisfactory subset (perhaps a dozen) of them.

c. Short-Term Evaluation

This course has been offered once before (fall 2001) as a 0701.395 Topics in Computer Science course. It will be offered a second time as a Topics course fall 2005.

The Department Curriculum Committee routinely evaluates all courses to confirm that they meet the standards of the Department, the College of Liberal Arts and Sciences, and the University.

3. Rationale

The two introductory courses taken by computer science majors, 0704.113 Introduction to Object-Oriented Programming and 0704.114 Object-Oriented Programming and Data Abstraction, focus on the object-oriented programming paradigm and quality design of object-oriented programs. There is time to cover only the basic features of Java, the programming language currently used in those two courses.

Java includes support for many advanced features in its libraries of classes, such as multiple threads, graphics, networking, database connectivity, and remote object access

The proposed course, Power Java, will give the interested student an opportunity to learn about and write programs using those advanced features.

4. Essence of the Course

This advanced programming course explores the power of the Java programming language. It looks at the advanced features provided in Java: reflection and proxies, interfaces and inner classes, graphics programming, the event listener model, event handling, Swing user interface components, graphical user interface design, object serialization, multithreading, network programming, remote objects and RMI, collection classes, database connectivity, and JavaBeans.

a. Objectives in Relation to Student Outcomes

Upon completion of Power Java, successful students will understand the advanced features of Java described in the section above and be able to write Java programs utilizing those advanced features.

b. Topical Outline/Content

Introduction, objects and classes

Inheritance, interfaces, inner classes

Graphics programming

Event handling
Swing user interface components
Applets
Exceptions
Streams and files
Multithreading
Collections
Network programming
Database Connectivity
Remote objects and remote method invocation
Advanced Swing and Advanced Widget Toolkit
JavaBeans

c. Evaluation and Grading

Students will be evaluated by traditional methods such as homework, quizzes, written exams, in-class presentations, and programming assignments.

d. Course Evaluation

The courses will be evaluated through customary student evaluations as well as regular departmental review.

5. Results of Consultations

We solicited letters of consultation from Mathematics, Management Information Systems, and Electrical/Computer Engineering. Received letters are attached.

From hamilton@rowan.edu Tue Feb 1 15:02:10 2005
Date: Tue, 01 Feb 2005 15:01:55 -0500
From: "Diane Hamilton" <hamilton@rowan.edu>
To: <hartley@elvis.rowan.edu>
Cc: "Daniel J. McFarland" <mcfarland@groupwise.rowan.edu>
Subject: curriculum consultation

Hi Steve,

The MIS faculty are happy to support your new course proposal, namely Power Java, as well as your change in the Computer Science program. We applaud your efforts to keep the program current, which we know can be quite difficult in such a quickly changing field.

sincerely,
diane hamilton

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revised February 8, 2005

Diane Hamilton, Ph.D.
Professor of MIS

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From Czochoor@rowan.edu Fri Feb 4 12:14:22 2005
Date: Fri, 04 Feb 2005 12:14:05 -0500
From: "Ronald Czochoor" <Czochoor@rowan.edu>
To: <hartley@elvis.rowan.edu>
Subject: Re: new course proposal: Power Java!

Steve,

The new course you are proposing has no direct effect on math majors or the math department. It does not conflict with any of our courses and does not put any additional strain on courses we offer that might be prerequisites. We cannot comment on the content of the course.

Ron Czochoor, Chairman
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Webpage:

<http://www.rowan.edu/mars/depts/math/czochoor/Homepage/homepage.htm>
Dept. webpage: <http://www.rowan.edu/mars/depts/math/>

0704.327 **3 s. h.**

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