

MAR 12 2003  
HOWLAND UNIVERSITY

Deadlines:

Regular proposals: October 18, 2002 to be implemented Fall 2003; Short-Term proposals: December 6, 2002 to be implemented Fall 2003  
Regular proposals: February 14, 2003 to be implemented Spring 2004; March 21, 2003 short-term courses to be implemented Spring 2004

PROPOSAL TITLE: Course Proposal: Digital Computer Laboratory

Sponsor(s): Seth Bergman E-Mail: bergman@uconn.edu Ext: 3197  
Leigh Weiss E-Mail: weiss@uconn.edu Ext: 3892  
and the E-Mail: \_\_\_\_\_ Ext: \_\_\_\_\_  
Computer Science Dept. E-Mail: \_\_\_\_\_ Ext: \_\_\_\_\_

DEPARTMENT: Computer Science

COLLEGE: Liberal Arts and Sciences

If Liberal Arts & Sciences CHECK :  History/Humanities  Math/Sciences  Social/Behavioral Sciences  
 UNDERGRADUATE  GRADUATE

THE ATTACHED NON-GEN-ED PROPOSAL IS BEST DESCRIBED BY THE ITEM(S) CHECKED.

- New non-gen-ed course
- Short-term non-gen-ed course
- Minor curricular changes (fewer than three)
- Existing non-gen-ed course
- Non-gen-ed degree requirements
- Major
- Minor, specialization, concentration, track, certificate program

The following signatures REPRESENT APPROVAL

Department Chair: [Signature] Date: 7/2/02  
Department Curriculum Chair: [Signature] Date: 2 July 2002  
Academic Dean: [Signature] Date: 7-2-02  
College Curriculum Chair: [Signature] Date: 12-13-02

College Curriculum Committee OPEN HEARING Date: 12/13/02 Approved  Not Approved

UNIVERSITY CURRICULUM COMMITTEE

Senate Curriculum Chair Signature: [Signature] Date: Senate Announcement/Vote: \_\_\_\_\_

Comments: \_\_\_\_\_  
EXECUTIVE VICE PRESIDENT/PROVOST Signature: [Signature] Date: 4/25/03

Approved ~ Not Approved due to the following:  Student Cr Hrs  Faculty Load Hrs  Equalized Cr Hrs

REGISTRAR

Date: 4-28-03 Course Description Received & Approved ~ Hegis Taxonomy & Course #: 0706-311

Registrar Signature: [Signature]

NOTIFICATION FORWARD

SCC Chair  Academic Dean  Department Chair  Registrar  Sponsor(s)

Cap IR transm. 5/19/03

# SCC#02-03-800

## Course Proposal

### Digital Computer Laboratory

[SCC 02-03-800]

#### 1. Details:

- a. Course Title: Digital Computer Lab
- b. Sponsor(s): Seth Bergmann, Leigh Weiss, Computer Science Department
- c. Semester-hours: 1 s.h.  
3 hour lab, meeting once per week.
- d. Course Level: Undergraduate, [Junior/Senior Level]
- e. Prerequisite: Computer Organization (0706.205)  
Corequisite: Principles of Digital Computers (0706.310)
- f. Time scale: This course is to be offered every semester, immediately upon approval.
- g. Curricular Effect: This will be a required course for Computer Science majors, but there will be no substantive impact since Principles of Digital Computers is changing from 4 semester-hours to 3 semester-hours.
- h. No additional resources will be needed. The existing Principles of Digital Computers course is 5 faculty load hours. It is being changed to 3 faculty load hours, and the Digital Computer Lab course will be 2 faculty load hours. Thus no additional staff will be needed for this change.
- i. Recommended Library Resources: No additional resources are needed.
- j. Short-term Evaluations: NA

#### 2. Rationale:

Principles of Digital Computers is a 4 semester-hour Lab Course. The intent of this proposal, and the accompanying curriculum proposals, is to split the lecture and lab components of that course into two separate courses, which would be corequisites for each other. Students who fail one component of this course (either lecture or lab) should not have to retake the component which they passed.

#### 3. Essence of the Course:

- a. Students will gain hands-on experience in the design and construction of digital components. This is done with state of the art software/hardware systems which are used to design, test, and implement digital circuits in hardware. This lab is an essential

companion to the classroom experience of Principles of Digital Computers (0706.310). Normally the Principles course and this Lab course will be taken concurrently.

- b. Topical Outline/Content
  - Combinational Logic Circuits
  - Combinational Logic Design, Decoders, Encoders, Multiplexers, Demultiplexers, Adders, Subtractors
  - Sequential Circuits, Latches, Flip Flops, State Machines
  - Registers and Counters
  - Memory, Programmable Logic Devices, RAM, ROM, PLA, PAL, FPGA
  - Register Transfer, Datapath, ALU, Shifters
  - Control Unit
  - CPU, Instruction Set Implementation
- c. Students will be evaluated on the basis of functional, correctly working projects completed and documented. Students will be assigned at least one project in each lab session.
- d. Course Evaluation: This course will be evaluated through student surveys, as well as by the Computer Science Acsemester-houration Commission when our major is to be re-evaluated in 2003.

#### 4. Results of Consultations

John Schmalzel, Electrical and Computer Engineering, was consulted.

- 5. This proposal is accompanied by two minor curricular change proposals.

6. Catalog Description:

0706.311 (Suggested hegis number)

1 s.h.

Digital Computer Laboratory

(Prerequisite: 0706.205, Corequisite: 0706.310) This lab course provides the student with hands-on experience in the design and implementation of digital components. State-of-the-art systems are used to design, test, and implement digital circuits: Combinational circuits, sequential circuits, registers, counters, datapath, arithmetic/logic units, control units, and CPU design. This course is taken concurrently with Principles of Digital Computer (0706.310).

Rowan University  
**LIBRARY RESOURCES**  
 to

**SUPPORT A NEW COURSE or NEW PROGRAM PROPOSAL**

The purpose of this form is to provide a channel of communication between the library and faculty 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(s) and the academic department liaison librarian.

- The sponsor(s) complete parts A & D  
 If assistance is required to complete parts A & D, please notify the liaison librarian.
- Forward this form to the librarian who will complete parts B, C, & E

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

A. College Liberal Arts & Sciences Department Computer Science

Proposed by: Seth D. Bergmann Date: Dec. 13, 2002

Course Title: Digital Computer Laboratory

Anticipated Date for Course/Program Offering: Fall '03.

B. 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.

*Books on digital logic are available.*

C. List key periodicals available in the library to support this course/program.

*ACM Digital Library is available.*

D. List specific resources that should be acquired to support this course.

*None.*

E. Librarian comments and recommendations:

*No additional library resources will be required to support the program.*  
*J. M. Miller*

Dr. Bergmann,

I have reviewed your department's plan to separate "Principles of Digital Computers" into a lecture component and a laboratory component. In general, I believe that the maximum student impact is made when courses are fully integrated--and concurrent. However, when other factors make it necessary to separate them, then you must follow that route. Perhaps you will be able to revisit this issue in the future.

Thanks for letting me take a look at your proposals so that we remain aware of the steps you are taking to continuously improve your program. I look forward to future interaction with you and your faculty as we continue to try and build the best programs we can. There are some great opportunities that have arisen as part of the new CSAB and ABET criteria--there will be even more as these two accrediting bodies fully merge.

Good luck w/ your curriculum proposals!

John L. Schmalzel  
Chair, ECE Dept.

>>> "Seth Bergmann" <Bergmann@rowan.edu> 02/20/02 01:03PM >>>  
John,

We would like to separate the lecture and lab components of our Digital Design course into separate courses that are taken concurrently. This should not affect ECE majors unless they have a double major with CS.

Sincerely,

Seth D. Bergmann	Computer Science
Associate Professor	Rowan University
856-256-4500 ext. 3197	Glassboro NJ 08028
Fax 856-256-4741	
Linden Hall, Room 201	

bergmann@rowan.edu

Memo to: Curriculum Committee

From: Seth D. Bergmann



Subject: Curriculum Proposal

Nov. 8, '02

Recently someone from your committee contacted me to let me know that my curriculum proposals to split “Principles of Digital Computers” (0706.310) which is a lab course, into two separate courses, needed additional catalog descriptions.

It does not require additional catalog descriptions because:

(a) The catalog description for “Principles of Digital Computers” (0706.310) is not changed, except for the fact that it is changing from a 4 credit course to a 3 credit course, and that “Digital Computer Lab” is a co-requisite. (The catalog description, mysteriously, makes no mention of a lab.) It is possible that the registrar will need to assign a new course number to accommodate this change. We suggest 0706.315.

(b) The proposal to create a lab course “Digital Computer Lab” has been submitted and contains a catalog description.

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Linden Hall, Room 201	

bergmann@rowan.edu



Mathematics Department

# MEMO

**TO:** Stephen J. Hartley  
Computer Science Department

**FROM:** Ron Czochor, Chair  
Mathematics Dept

**DATE:** December 19, 2002

**RE:** Addendum to previous consultation on proposed changes to CS courses

In my previous communication (3/8/02), I stated the following:

*If, as you say in your proposal, students from other disciplines will be better served by studying Visual Basic and C++, how can you justify changing the minor, which is designed for these students, so that they do not take these languages. If Java is a better language for learning how to program a computer, then Intro to Programming should use this language as well.*

*I cannot support your proposed change if these courses will be required for the CS minor. In fact, since the Mathematics department has students who often want to take advanced CS courses as well, if these new courses are prerequisites for upper level courses I will not support the new courses at all.*

*If a change is necessary at the introductory level, I think all students would benefit from this change.*

With the addition of the new 1 SH bridge course in Java, I can see that our math majors who want to minor in CS will be able to do this with little inconvenience. Those of our majors with an interest in CS from the beginning could easily be advised to take the new course rather than Intro to Programming. I now support the changes.