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Glassboro State College Senate Curriculum Committee

Approval Form

Proposal Title: Change in Name for Computer Architecture and Assembly Lang. Prog.

Sponsor(s) Don Stone Dept.: Math/Computer Sci. Ext. 7323

Check one: Course Specialization Concentration Minor Achievement Certificate
 Certification Program Major Program Minor Change NAME
(Please name: deletion or credit/title/catalog change)

Undergraduate Graduate 3 Credit Hours

Step 1 (Department)

Approved 10/19/87
Date

Not Approved

Ronald P. Zuber
Dept. CC Chairperson

Reviewed 11-21-87
Date

[Signature]
Dept. Chairperson

Step 2 (Receipt)

SCC# 87-88-20

Proposal Received 11/18/87
Date

Brenda A. Bolay
SCC Chairperson

Step 3 (School CC)

Reviewed 2/9/88

Approved
 Not Approved

Comments:

[Signature]
School Curr. Comm. Chairperson

Step 4 (Academic Dean) **Comments:**

Recommend
 Not Recommend
 Conditionally Recommend (see comments)

Reviewed 2/22/88
Date

[Signature]
Signature, Dean of School

Step 5 (SCC)

Open Hearing 3/8/88 Approved by Senate Curriculum Committee 3/8/88
Date Date

Returned to sponsor(s) for the following reasons:
Need Approval outline for new course to replace 35th course
Course description? OK

Step 6 (Senate)

Presented to Senate 3/8
Date

Approved Not Approved

Notification to Vice-President for Academic Affairs 3/20/88
Date

[Signature]
Signature, SCC Chairperson

Step 6 (Senate)

Received 4/7/88
Date

Approved YES No

If no, reasons are as follows:

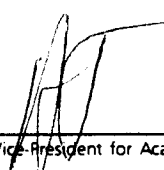
Student credit hours NA

Faculty load hours NA

Equalized credit hours NA

TITLE CHANGE ONLY

Official copy and approval sheet filed 5-12-87
Date



Signature, Vice-President for Academic Affairs

Registrar

Approved course description received _____
Date

Hegis Taxonomy and Course Number assigned _____

Signature, Registrar Date

Notification forwarded:

- Senate Curriculum Committee Chairperson
- Department Chairperson(s)
- Academic Dean(s)
- Registrar
- Sponsor(s)

CURRICULUM PROPOSAL

Proposal for Change in Name for Computer Architecture and Assembly Language Programming

1. Details

- a. Change Requested: Change course name for 0704.204 from Computer Architecture and Assembly Language Programming to Assembly Language Programming.
- b. Sponsors: Don Stone, Department of Mathematics and Computer Science.

2. Rationale

- a. The field of computer architecture has grown considerably during the last several years, and the Department now has a separate course in computer architecture. As a result, very little computer architecture is now covered in the assembler course. (A syllabus for the course as currently taught is attached.)
- b. This change will have little curricular effect apart from the effects detailed in the proposal to revise the Computer Science major.

3. Consultations are internal to the Department of Mathematics and Computer Science.

GLASSBORO STATE COLLEGE
Department of Mathematics and Computer Science

Syllabus

0704.204 - Computer Architecture and Assembly Language

CATALOG DESCRIPTION:

0704.204 Computer Architecture and Assembly Language
(Prerequisite: 0701.102 and 1703.150)

This course is a continuation of the study of digital computers and programming begun in Introduction to Computer Science. The topics include computer architecture, machine language, addressing techniques and the elements of assembly language programming (e.g. IBM 370 BAL). The student is expected to run successfully at least five assembly language programs.

OBJECTIVES:

Each student will learn machine language and assembly language (BAL) for the IBM 370 computers, will continue the programming experienced gained in the Introduction to Computer Science course and will develop a deeper understanding of higher level programming languages.

ASSIGNMENTS:

Each student is expected to write and successfully run on the computer approximately 5 BAL programs. These will be submitted as described by the instructor and graded. Also, the course examinations will require an understanding of programming that can only be obtained by promptly completing the programs assigned. Note: these programs will require 1 to 2 hours a week at the computer center.

GRADING:

The final grade will be computed from the grades of the 3 exams given and the computer programs assigned during the semester. The 3 exams will count 80%, the quizzes 5% and the computer programs will account for the remaining 15%.

TEXTS:

Stern, Nancy, Sager, Alden and Stern, Robert A., 370/360 ASSEMBLER LANGUAGE PROGRAMMING, John Wiley and Sons, Inc., New York, 1979.

Kudlick, Michael D., ASSEMBLY LANGUAGE PROGRAMMING for the IBM SYSTEMS 360 and 370 for OS and DOS, 2nd. ed., Wm. C. Brown Company Publishers, Dubuque, Iowa, 1983.

CONTENT:

(BAL - hierarchy of languages)

1. Machine Language

- 1.1 Only language which computer understands directly without translation

- 1.2 Data Types - Fixed binary, packed decimal, character,
floating point, Dc, DS
- 1.3 Instruction Formats - RR, RX, RS, SI, SS
2. Arithmetic and Branching
 - 2.1 Fixed point add, subtract, multiply, divide
 - 2.2 Packed decimal add, subtract, multiply, divide
 - 2.3 Floating point add, subtract, multiply, divide, normalize *
 - 2.4 PSW, condition code, conditional branch
 - 2.5 Loop control
3. Character String Manipulation
 - 3.1 Compare - CLC, CLI
 - 3.2 Move - MVC, MVI, (MVN, MVZ, MVO *)
 - 3.3 PACK, UNPK
 - 3.4 Interrupts, I/O
4. Address Modification
 - 4.1 Arrays
 - 4.2 Indexed Address
 - 4.3 Sorting, searching
5. Subroutines
 - 5.1 Simple call and return - BALR, BR
 - 5.2 OS Linkage Conventions *
6. Bit Manipulation
 - 6.1 Or, And, Exclusive Or
 - 6.2 Shift - Left, Right, Arithmetic, Logical, Single, Double
7. The Assembler
 - 7.1 The two-pass assembler
 - 7.2 Translation to machine language
8. System 370 Architecture *
 - 8.1 Microprogrammed CPU *
 - 8.2 Channels - Multiplexor, selector *
 - 8.3 I/O - DCB, OPEN, CLOSE, GET, PUT *
9. Macro Instructions
 - 9.1 Macro Definitions
 - 9.2 Macro Calls and Expansions
 - 9.3 Symbolic Parameters
 - 9.4 Conditional Assembly *

* Include only if time permits.