# Glassboro State College Senate Curriculum Committee

## Approval Form

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

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

**Check one:**  
- [ ] Course  
- [ ] Specialization  
- [ ] Concentration  
- [ ] Minor  
- [x] Achievement Certificate  
- [ ] Certification Program  
- [ ] Major Program  
- [x] Minor Change  

**Undergraduate**  
**Graduate**  
**3** Credit Hours

### Step 1 (Department)
- [x] Approved  
  - **Date:** 10/19/87  
  - **Reviewed:** 11/19/87  
  - **Signatures:**  
    - Dept. Chairperson

### Step 2 (Receipt)
- **SCC#:** 87-88-20  
  - **Proposal Received:** 11/17/87  
  - **Signatures:**  
    - Brenda A. Bolany
    - SCC Chairperson

### Step 3 (School CC)
- **Reviewed:** 2/9/88  
- [x] Approved  
- [ ] Not Approved  

**Comments:**

### Step 4 (Academic Dean)

- **Recommend**  
- [ ] Not Recommend  
- [ ] Conditionally Recommend (see comments)

- **Reviewed:** 2/12/88

**Signature, Dean of School**

### Step 5 (SCC)

- **Open Hearing:** 2/18/88  
- [x] Approved by Senate Curriculum Committee  
  - **Date:** 3/8/88

- **Returned to sponsor(s) for the following reasons:**
  - Need approval on title for course to be added 3.5 in computer science (discipline not filled)

### Step 6 (Senate)

- **Presented to Senate:** 3/12/88  
- [x] Approved  
- [ ] Not Approved

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

**Signature, SCC Chairperson**
Step 6 (Senate)
Received 4/7/88
If no, reasons are as follows:

Student credit hours  
Faculty load hours  
Equalized credit hours  
Official copy and approval sheet filed 5-12-87  

Signature, Vice President for Academic Affairs

Registrar
Approved course description received  
Hegis Taxonomy and Course Number assigned  

Signature, Registrar

Notification forwarded:

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

Rev 6/87  60178
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:


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.