

Faculty Senate Curriculum Committee

Approval Form

Proposal Title: Catalog Change for 0701.540 Computer Science I

Sponsor(s): Wai-kei Yau Dept.: Math/Computer Science

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

Undergraduate Graduate 3 Credit Hours

<p>Step 1 (Department)</p> <p><input checked="" type="checkbox"/> Approved <u>3/26/86</u> <small>Date</small></p> <p><input type="checkbox"/> Not Approved</p> <p><u>[Signature]</u> <small>Dept. CC Chairperson</small></p> <p><input checked="" type="checkbox"/> Reviewed <u>4-4-86</u> <small>Date</small></p> <p><u>[Signature]</u> <small>Chairperson, Dept.</small></p>	<p>Step 2 (Receipt)</p> <p>SCC# <u>85-86-89</u></p> <p>Proposal Received <u>04/07/86</u> <small>Date</small></p> <p><u>Brenda A. Bolay</u> <small>Chairperson, SCC</small></p>	<p>Step 3 (School CC)</p> <p>Reviewed <u>4/21/86</u> <small>Date</small></p> <p><input checked="" type="checkbox"/> Approved</p> <p><input type="checkbox"/> Not Approved</p> <p>Comments: <u>English changes</u></p> <p><u>[Signature]</u> <small>Chairperson, School Curr. Comm.</small></p>
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Step 4 (Academic Dean) **Comments:**

Reviewed 4/27/86
Date

[Signature]
Signature, Dean of School

Step 5 (SCC)

Open Hearing 5/14/86 Approved by Senate Curriculum Committee 5/14/86
Date Date

Returned to sponsor(s) for the following reasons:

Step 6 (Faculty Senate)

Presented to Faculty Senate : 5/21/86 Approved Not Approved
Date

Notification to Vice-President Academic Affairs 5/21/86 Brenda A. Bolay
Date Signature, SCC Chairperson

Step 7 (Vice-President for Academic Affairs)

Received 5/22/84
Date

Approved Yes No

If no, reasons are as follows:

*DESCRIPTION CHANGE
ONLY*

Student credit hours NA

Faculty load hours NA

Equalized credit hours NA

Official copy and approval sheet filed 9/16/84
Date

Signature

[Handwritten 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
CATALOG DESCRIPTION CHANGE FOR
0701.540 COMPUTER SCIENCE I

1. Details

a. Change Requested

From : 0701.540

Computer Science I

(Prerequisite: two semesters of undergraduate
Calculus)

Algorithms, flow diagrams. Fundamentals of computer
structure and operation, Basic programming,
numerical applications, educational applications and
social consequences of computers are considered.

To:

0701.540
Computer Science I

(Prerequisite: two semesters of undergraduate
Calculus)

This course emphasize programming methodology,
algorithm and simple data structures. A procedure-
oriented programming language (such as Pascal, PL-1
, ADA) is used to implement computer-based solution
to particular problems).

b. Sponsor : Wai-kei Yau, Department of Math/Computer Science

2. Rationale

a. As more high schools offer BASIC, elementary knowledge
about computers and computing is increasingly being taught in
high schools. The Math/Computer Science department recognizes
this fact and BASIC is no longer a required course for computer
science majors. It is no longer appropriate for a graduate level
course to assume students know next to nothing about computers
and computing and uses BASIC as the main programming language.

b. Curricular effect : Since there is no graduate program in
computer science, this proposal will not affect any existing
program requirements. The main curricular effect will be a
strengthening of the post-baccalaureate certificate.

3. Consultation

a. John Sooy, Department of Math/Computer Science

b. Jane Sullivan, Reading/Speech Correction

c. Margaret Cagney, Coordinator of Graduate Studies

COMPUTER SCIENCE I

SYLLABUS

- 1. Introduction to Computer Science
 - 1.1. Computer Systems
 - 1.2. Data Representation
 - 1.3. Computer Architecture
 - 1.4. Operating Systems
- 2. Programming Fundamentals
 - 2.1. Variables and Data Types
 - 2.2. Control Structures
 - 2.3. Functions and Modules
 - 2.4. File Handling
- 3. Data Structures
 - 3.1. Lists and Arrays
 - 3.2. Stacks and Queues
 - 3.3. Trees and Graphs
 - 3.4. Hash Tables
- 4. Algorithms and Complexity
 - 4.1. Algorithm Design
 - 4.2. Time Complexity
 - 4.3. Space Complexity
 - 4.4. Sorting and Searching
- 5. Database Systems
 - 5.1. Data Models
 - 5.2. Relational Databases
 - 5.3. Query Languages
 - 5.4. Database Management Systems
- 6. Networks and Security
 - 6.1. Network Topologies
 - 6.2. Protocols and Standards
 - 6.3. Security Fundamentals
 - 6.4. Cryptography
- 7. Project Work
 - 7.1. Problem Statement
 - 7.2. Requirements Analysis
 - 7.3. Design and Implementation
 - 7.4. Testing and Evaluation