

**Georgia Institute of Technology**  
**Institute Undergraduate Curriculum Committee**  
**Full Committee (Academic Matters, Appeals, and Petitions)**  
**Wednesday, January 16, 2008**

**Present:** Tone (HTS), Pikowsky (REG), Stein (Dean of Students), Barke (PUBP), Seitzman (AE), Parsons (MGT), Kubanek (BIOL), Bottomley (CHEM), Jarrett (ARCH), Riley (ECE), Mihail (COC/CS), Chang (MGT), Ferri (ME)

**Visitors:** Bradd (REG), Banks (REG), Shook (ML), Pilsch (COC), Fujimoto (CSS), Williams (ECE)

**Note:** All action items in these minutes require approval by the Academic Senate. In some instances, items may require further approval by the Board of Regents or the University System of Georgia. If the Regents' approval is required, the change is not official until notification is received from the Board to that effect. Items that are marked below with an asterisk (\*) require USG and/or BOR approval and are not official until approval has been received. Academic units should take no action on these items until USG and/or BOR approval is secured. In addition, units should take no action on any of the items below until these minutes have been approved by the Academic Senate or the Executive Board.

**Academic Matters**

1. A motion was made to approve a request from the School of Modern Languages to grant AP credit for Latin. The motion was seconded and approved.

Maximum of 6 credit hours granted for LATN 2XXX with scores of 4 or 5 on the AP Latin Language or Literature examination. Humanities credit will be awarded.

Note: The Registrar's Office will create a subject code, LATN.

2. A motion was made to approve a request from the School of Modern Languages for new courses. The motion was seconded and approved.

**NEW COURSES**

CHIN 3006 Intercultural Communication: Sino-American Interactions 3-0-3

*Note: add to catalog description: Conducted in Chinese.*

FREN 4241 French Cinema I: Cinematic Experiences 3-0-3

FREN 4242 French Cinema II: The French New Wave 3-0-3

JAPN 4163 Introduction to Japanese Linguistics 3-0-3

JAPN 4750 Japanese Discourse and Grammar 3-0-3

LING 4065 History of the English Language 3-0-3

*Note: All grade modes apply.*

3. A motion was made to approve a request from the School of Biomedical Engineering for new courses and curriculum changes. The motion was seconded and approved.

## NEW COURSES

BMED 1000 Introduction to Biomedical Engineering 1-0-1  
BMED 3100 Systems Physiology 3-0-3  
BMED 3110 Quantitative Engineering Physiology Laboratory I 1-3-2  
BMED 3510 Biomedical Systems and Modeling 3-2-4  
BMED 3600 Physiology of Cellular and Molecular Systems 3-0-3  
BMED 3610 Quantitative Engineering Physiology Laboratory II 1-3-2  
BMED 4477 Biological Networks and Genomics 2-3-3

## CURRICULUM CHANGES\*

- Replace BMED 3160 with BMED 3600
- Deactivate BMED 3160
- Replace BMED 3161 with BMED 3100
- Deactivate BMED 3161
- Add BMED 3110 and BMED 3610 as required courses
- Move ECE 3710 and ECE 3741 from the list of required courses to the list of approved BME technical elective courses
- Replace BMED 3500 with BMED 3510 as a required course
- Add BMED 1000 as a required course for incoming freshmen
- Reduce free elective hours from 5 to 4
- Allow up to 6 hours of BMED 2699/4699 Undergraduate Research to count as BME technical electives, provided the research was conducted in the same lab over a period of at least two semesters. BMED 2698/4698 can be used to satisfy the two-semester requirement.

## PREREQUISITE CHANGES – Information Item

### Changes are underlined:

BMED 1300	<u>Remove MATH 1501</u> , <u>add BMED 1000</u> BIOL 1510, Prerequisite with concurrency
BMED 2210	BMED 1300 (Minimum grade of C), <u>Remove MATH 2403</u> , <u>add CHEM 1310</u> , And PHYS 2211 (Minimum grade of C)
BMED 2300	BMED 1300 (Minimum grade of C), <u>Remove BMED 2210</u> And COE 2001, Prerequisite with concurrency
BMED 2400	MATH 1501 (Minimum grade of C), <u>Add CS 1371</u>
BMED 4400	<u>Replace BMED 3500</u> , <u>Add BMED 3110</u> and BMED 4752
BMED 4500	<u>Replace BMED 3160</u> , <u>Add BMED 3610</u> and BMED 3300 and BMED 3400
BMED 4600	<u>Replace BMED 3161</u> , <u>Replace BMED 3500</u> , <u>Add BMED 3610</u> , Prerequisite with concurrency
BMED 4750	<u>Replace BMED 3500</u> , <u>Add BMED 3110</u>
BMED 4752	<u>Replace BMED 3160</u> , <u>Add BMED 3600</u> or BIOL 3340
BMED 4783	ECE 2025 AND (CEE/ISYE/MATH 3770) <u>Add OR BMED 2400</u>
BMED 4784	ECE 3040 <u>Add or BMED 3510</u>

Add new course, BMED 4477 to the list of approved BME technical electives.

4. A motion was made to approve a request from the School of Electrical and Computer Engineering for new courses, deactivation of courses, prerequisite modifications, and degree modifications. The motion was seconded and approved.

### NEW COURSES

ECE 3071 Modern Electric Energy Systems 2-3-3  
ECE 4001 Engineering Practice and Professionalism 2-0-2  
ECE 4007 ECE Culminating Design Project 2-6-4  
ECE 4325 Electric Power Quality 3-0-3  
ECE 4335 Electric Machinery Analysis 3-0-3

*Note: Credit is not allowed for both ECE 4335 and ECE 6335.*

### DEACTIVATE COURSES

ECE 3301, ECE 4000, ECE 4006, ECE 4340

### PREREQUISITE MODIFICATIONS

Modification of ECE course prerequisites, as specified below. (**Addition/change; deletion only**)

[conc] = concurrency allowed; [min C] = minimum grade of C required

- ECE 2025 – (MATH 1502 [min C] or (MATH 15X2 [min C] and MATH 1522 [min C]) or MATH 1512 [min C]) and (~~CS 1322 [min C]~~ or CS 1371 [min C] or CS 1171 [min C])
- ECE 2030 – ~~CS 1321 [min C]~~ or CS 1371 [min C] or CS 1171 [min C]
- ECE 2031 – CS 1372 [min C] and ECE 2030 [min C]
- ECE 3035 – ECE 2030 [min C] and CS 1372 [min C]
- ECE 3431 – ECE 3050 and ECE 3042 [min C]
- ECE 4170 – ECE 2031 [min C]
- ECE 4175 – ECE 2031 [min C]
- ECE 4180 – ECE 3035 or ECE 3055
- ECE 4330 – ECE 3040 [min C] and ECE 3042 [conc] [min C]
- ECE 4391 – ECE 3025 [min C] and ECE 3040 [min C]
- ECE 4410 – ECE 3040 [min C]
- ECE 4415 – ECE 3025 [min C] and ECE 3050
- ECE 4420 – ECE 3040 [min C]
- ECE 4435 – ECE 3041 [min C]

- ECE 4445 – ECE 3040 [**min C**]
- ECE 4460 – ECE 3040 [**min C**] or ECE 3710
- ECE 4500 – ECE 3025 [**min C**]
- ECE 4501 – ECE 3025 [**min C**]
- ECE 4580 – ECE 2025 [**min C**]
- ECE 4601 – ECE 3040 [conc] [**min C**] and (CEE 3770 or ISYE 3770 or MATH 3770 or ISYE 2027)
- ECE 4606 – ECE 2025 [min C] and (ECE 3040 [conc] [**min C**] or ECE 3710) and (CEE 3770 or ISYE 3770 or MATH 3770 or ISYE 2027)
- ECE 4752 – ECE 3040 [**min C**] or ECE 3710
- ECE 4754 – ECE 3040 [**min C**] or ECE 3710
- ECE 4781 – ECE 3040 [**min C**] or ECE 3710
- ECE 4782 – **BMED 3510** or CHBE 4400 or ECE 2040 [**min C**] or ME 3015
- ECE 4783 – ECE 2025 [**min C**] and (MATH 3770 [conc] or ISYE 3770 [conc] or CEE 3770 [conc] or **ISYE 2027 [conc] or BMED 2400**)
- ECE 4784 – ECE 3040 [**min C**] or **BMED 3510**

#### **MODIFICATION OF DEGREE REQUIREMENTS\***

Modification of the degree requirements for both the **Bachelor of Science in Electrical Engineering and the Bachelor of Science in Electrical Engineering (Regional Engineering Program)**, including all degree options.

There is no net change in the number of credit hours required for the degree.

- **Delete** CS 1322 (3 hours), ECE 4000 (3 hours)
- **Add** CS 1372 (3 hours), ECE 4001 (2 hours), ECE 4007 (4 hours)
- **Reduce** the number of ECE Elective hours from 23 to 20
- **Modify** the ECE Electives requirement to read as follows. (*Addition, deletion*)
  - Twenty-~~three~~ hours: 3000 level or above in ECE, at least ~~six~~ ~~nine~~ hours at the 4000 level or above; ~~must include an approved electrical engineering major design course~~; must include three of the following course options: ECE 3050, ECE 3055 or 3060, ECE 3065, ECE 3070 **or 3071**, ECE 3075 or 3076, ECE 3080, ECE 3085, or ECE 3090.
- **Blanket substitutions** for students graduating under degree requirements from earlier curriculum years, as follows:
  - ECE 4001 + 1 hour ECE electives **for** ECE 4000
  - ECE 4007 is an approved electrical engineering major design course
  - CS 1372 **for** CS 1322

**NOTE:** Modify suggested 8-semester schedule as follows:

Semester 2: delete CS 1322, add CS 1372, 17 total hours

Semester 7: delete ECE 4000, add ECE 4001, 15 total hours

Semester 8: delete "ECE Design Elective(s)", add ECE 4007, 16 total hours

Modification of the degree requirements for both the **Bachelor of Science in Computer Engineering and the Bachelor of Science in Computer Engineering (Regional Engineering Program)**, including all degree options. There is no net change in the number of credit hours required for the degree.

- **Delete** CS 1322 (3 hours), ECE 4000 (3 hours)
- **Add** CS 1372 (3 hours), ECE 4001 (2 hours), ECE 4007 (4 hours)
- **Reduce** the number of ECE/CS Elective hours from 13 to 10
- **Modify** the ECE/CS Electives requirement to read as follows. (*Addition, deletion*)
  - ~~Ten~~ ~~Thirteen~~ hours: 3000 level or above in ECE or CS, at least ~~six~~ ~~nine~~ hours at the 4000 level or above; ~~must include an approved computer engineering major design course.~~
- **Blanket substitutions** for students graduating under degree requirements from earlier curriculum years, as follows:
  - ECE 4001 + 1 hour ECE/CS electives **for** ECE 4000
  - ECE 4007 is an approved computer engineering major design course
  - CS 1372 **for** CS 1322
- **NOTE:** Modify suggested 8-semester schedule as follows:

Semester 2: delete CS 1322, add CS 1372, 17 total hours

Semester 7: delete ECE 4000, add ECE 4001, 14 total hours

Semester 8: delete "Computer Engineering Design Course", add ECE 4007, 17 total hours

5. A motion was made to approve a posthumous degree for a student in School of Chemical and Biomolecular Engineering. The motion was seconded and approved.
6. A motion was made to approve a posthumous degree for a student in the School of Materials Science and Engineering. The motion was seconded and approved.
7. An informational item from the School of Mechanical Engineering was acknowledged.

### **DEACTIVATE COURSE**

NRE 4335 – Radiation Imaging

8. An information item from the School of Mathematics was acknowledged.

### **PREREQUISITE MODIFICATIONS**

Course	Action	Course or Exam	Score	Action	Course or Exam	Score
MATH 1511	Change	SAT Math (S02)	700	Add	or Converted ACT Math (C02) or MATH 1501	700
MATH 1711	Add	Converted ACT Math (C02)	550			
MATH 1712	Add	Converted ACT Math (C02)	550			
MATH 2413	Add	MATH 2605				
MATH 3012	Delete	MATH 1711		Remove	Must have at least 12 hours to take this course	
MATH 3215	Add	or MATH 2605				
MATH 3225	Add	or MATH 2605				
MATH 3770	Add	or MATH 2605				
MATH 4022	Add	or MATH 3022				
MATH 4032	Add	or MATH 3022				
MATH 4221	Add	or MATH 3770 or ISYE 3770 or CEE 3770				
MATH 4255	Add	or MATH 3770 or ISYE 3770 or CEE 3770				
MATH 4261	Add	or MATH 3770 or ISYE 3770 or CEE 3770				
MATH 4280	Add	or MATH 3770 or ISYE 3770 or CEE 3770				
MATH 4305	Add	or (MATH 15X2 and MATH 1522)				
MATH 4320	Delete	MATH 1502, 1512, 15X2, 1522		Add	MATH 2401 or MATH 2411 or MATH 24X1 or MATH 2605	
MATH 4347	Change	MATH 2406 and (MATH 2403 or MATH 2413 or MATH 24X3 or MATH 2605)				
MATH 4441	Add	or MATH 2605				
MATH 4580	Delete	or MATH 1712				
MATH 4581	Add	or MATH 24X3 or MATH 2605				
MATH 4782	Add	or MATH 2605				
MATH 6241	Add	or MATH 6337				
MATH 6300	Add	or MATH 6337				
MATH 7334	Add	or MATH 6337				
MATH 7337	Add	or MATH 6337				

9. A motion was made to approve a request from the College of Computing for curriculum changes, a new certificate in Software Engineering, and modifications to prerequisites. The motion was seconded and approved.

### **CURRICULUM CHANGES\***

#### Bachelor of Science in Computer Science

Revision does not change the structure of the Threads-based curriculum approved by the IUCC in January 2006 and does not alter alignment of courses required by name in this existing curriculum. Change involves renaming of three of the threads (tracks) and reorganization of the elective courses within each thread to provide more pedagogically focused selections.

#### Renamed Threads:

- FROM: Computing and Computational Modeling  
TO: Computing and Modeling & Simulation
- FROM: Computing and Embodiment  
TO: Computing and Devices
- FROM: Computing and Foundations  
TO: Computing and Theory

### Renaming of elective course groups:

The second change involves a renaming of the elective course groups within each thread to provide more pedagogically focused selections. For example, in the People thread under the original alignment there are two entries for an elective group of three courses, "Pick one: CS 3790, CS 3750, or CS 4660." The intent is that each student pick two of the three possible options. The new People thread plans each contain two different entries, "One Course from Human-Centered Technology." A separate listing will provide the courses approved for the Human-Centered Technology option (in case, the same CS 3790, CS 3750, or CS 4660).

The course options for all the named elective groupings for all eight threads are provided in the documentation for this request.

This change provides two significant advantages. First, it simplifies the maintenance of The Threads curriculum catalog entries. In the future, the CoC will submit a description of any changes to the Threads curriculum to the IUCC as an informational item. Future changes will not have to be approved by the IUCC, but will have to be acknowledged by the Committee and discussed as necessary before being reported in the Minutes.

The second advantage of this change is a marked improvement in the pedagogical focus of the individual Threads curricula.

## **NEW CERTIFICATE**

### **General**

The College of Computing proposes a Certificate in Software Engineering be made available to undergraduate students at Georgia Institute of Technology. Software Engineering is a recognized field within Computing with its own body of knowledge (see SWEBOK at <http://www.swebok.org/>). This certificate would be awarded to any undergraduate student at the institute that completes the required coursework (See Coursework Requirements below).

### **Coursework Requirements**

The Certificate in Software Engineering requires 12 hours of coursework. This coursework can be thread electives, but cannot be counted as both a certificate course and a core thread course. All coursework must be taken for letter grade credit, and the student must receive a C or higher in each course used for the certificate.

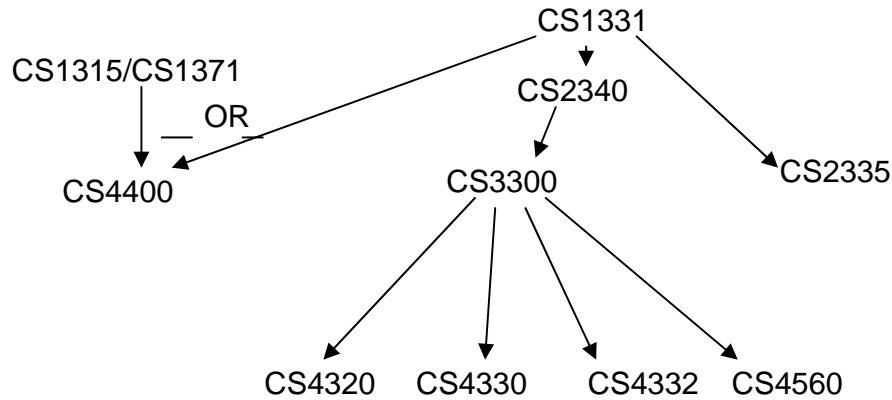
#### *Required (6 Hours)*

CS2335 Software Practicum  
CS3300 Introduction to Software Engineering

#### *Elective (6 Hours, Choose any 2 courses)*

CS4320 Software Process  
CS4330 Software Applications  
CS4332 Software Generation, Test, Maintenance  
CS4400 Database Systems  
CS4560 Verification of Systems

Students in threads requiring CS3300 would have to pick an additional elective from the elective course list as they cannot use required courses for a certificate. Also, students outside CS whose programs require CS4400 (mainly ISYE), would need to pick elective courses that did not include CS4400. Students outside CS do not normally take CS2340, so they would have to complete that course in addition to the other certificate courses in order to reach CS3300.



Prerequisite Chain

## Procedures

### *Students*

Students will fill out the form at Appendix A during their final semester and submit it to the Undergraduate Certificate Coordinator (Milena Mihail). (Instructions on back of Appendix A)

### *Certificate Coordinator*

Receives the student certificate requests. Checks with advisors on student standing and data. After verifying that student is eligible and has met graduation requirements, prepares certificate and mails to student. Maintains certificate request on file. Ensures that the certificate program is reviewed at least every six years.

### *Software Engineering Area Advisor*

Reviews the requirements for the certificate annually to ensure courses still map to desired outcomes and the SWEBOK.

## Software Engineering Certificate Program

The College of Computing offers a *Certificate in Software Engineering*. This certificate program provides students with emphasis in Software Engineering through a focused set of courses.

The certificate requirements are the same for all students, whether enrolled in the College of Computing or in another school within the institute.



Students must earn a C or better in the two core courses. These courses must be taken on a letter grade basis. The required courses are:

CS2335      Software Practicum  
CS3300      Introduction to Software Engineering

***Note: For students in Threads, where CS3300 is a required course, an additional elective course below must be substituted since institute policy prohibits required courses from being used as certificate credit.***

Students must earn a C or better in two additional courses with the Software Engineering field. These courses must also be taken on a letter grade basis. The elective courses to choose from are:

CS4320      Software Process  
CS4330      Software Applications  
CS4332      Software Generation, Testing and Maintenance  
CS4400      Introduction to Database Systems  
CS4560      Verification of Systems

**Note: If CS4400 is required by your field of study you may not use it as an elective for the Software Engineering Certificate.**

## **APPLICATION FOR CERTIFICATE IN SOFTWARE ENGINEERING**

### **INSTRUCTIONS:**

- (1) During your last semester of enrollment in your sequence of certificate courses (this may be as late as your last semester before graduation based on when you schedule your classes), please complete this form.
- (2) Be sure that your permanent address is given since that is the address where your certificate will be mailed.
- (3) Submit this form to Dr. Milena Mihail, College of Computing, Klaus Room 2138.
- (4) Your Certificate in Software Engineering will be mailed to you after you have completed all requirements for graduation.
- (5) If you have questions, please contact Dr. Mihail. You can reach her at: 404/385-0617 or email: [milail@cc.gatech.edu](mailto:milail@cc.gatech.edu)

\_\_\_\_\_  
Name for Certificate (please print)

\_\_\_\_\_  
Graduation Semester

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Student Number

\_\_\_\_\_  
Major School

\_\_\_\_\_  
Email Address

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Permanent Address (Street, City, State, Zip)

PLEASE LIST THE COURSES COMPLETED:

	<i>Course</i>	<i>Grade</i>	<i>Semester</i>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____

### **BSCS PREREQUISITE CORRECTIONS**

#### COURSE OLD PREREQUISITE

CS 3451 (CS 2110 or CS 2260) and MATH 2605  
CS 4237 CS 3210 and CS 3251 and CS 3510  
CS 4270 CS 4260 and CS 4251  
CS 4290 CS 3220  
CS 4496 CS 4451  
CS 4605 CS 2110 or CS 2260  
CS 4616 CS 3600 or CS 3630  
CS 4625 CS 3600 or CS/PSYC 3750  
CS 4641 CS 4600  
CS 4650 CS 4600

#### NEW PREREQUISITE

(CS 2110 or CS 2261) and MATH 2605  
CS 3251  
CS 3251  
CS 2200  
CS 3451  
CS 2110 or CS 2261  
CS 1331  
CS 1331  
CS 1331  
CS 1331

10. A motion was made to table a request from the College of Computing for new courses so that the Committee could have an opportunity to review the proposals before the next meeting. The motion was seconded and approved.

### **Petitions**

#### Student Petitions Considered and Voted-Upon by the Committee

All were approved except as noted:

- 1-Request to waive 36 hour rule
- 1-In person appeal retroactively withdraw SP & FA01 (**denied**)
- 1-In person appeal request to readmit SP08 after second drop
- 1-In person appeal request to readmit SP08 after first drop (**denied**)
- 2-Appeal request late withdrawal from FA07 (**2denied**)

Adjourned,

Reta Pikowsky  
Registrar