



The University of Georgia

University Council
Athens, Georgia 30602

April 22, 2016

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Dear Colleagues:

The attached proposal for the following new areas of emphasis under the major in Computer Science (B.S.) will be an agenda item for the April 29, 2016, Full University Curriculum Committee meeting:

Area of Emphasis in Applied Data Science

Area of Emphasis in Cybersecurity

Sincerely,

William K. Vencill, Chair

University Curriculum Committee

cc: Provost Pamela S. Whitten
Dr. Rahul Shrivastav

PROPOSAL FOR AREA OF EMPHASIS

1. School/College: Franklin College of Arts and Sciences
2. Department/Division: Computer Science
3. Major: Computer Science (B.S.)

If major has more than one area of emphasis, submit all areas of emphasis under one major together. A course may appear in more than one area of emphasis, but each area of emphasis should have a distinct focus.

4. Major Requirements: Attach a list of requirements for the major. Undergraduate programs may attach a copy of the major requirements from the online bulletin. Graduate programs may provide a list of general requirements for the major.
5. Area of Emphasis Title (as it will appear in the *Bulletin*): Applied Data Science
6. Proposed starting date: Fall 2016
7. Area of Emphasis Description:
Include prefixes, numbers and titles of required courses, number of credit hours required; residency requirements (if any); and grade requirements (if any). Graduate Areas of Emphasis may refer to groups of courses if necessary.

Applied Data Science

Choose 12 hours from the following:

- CSCI 4360/6360, Data Science II (4 hours)
- CSCI 4350/6350, Global Information Systems (4 hours)
- CSCI 4370/6370, Database Management (4 hours)
- CSCI 4380/6380, Data Mining (4 hours)

PROPOSAL FOR AREA OF EMPHASIS

1. School/College: Franklin College of Arts and Sciences
2. Department/Division: Computer Science
3. Major: Computer Science (B.S.)

If major has more than one area of emphasis, submit all areas of emphasis under one major together. A course may appear in more than one area of emphasis, but each area of emphasis should have a distinct focus.

4. Major Requirements: Attach a list of requirements for the major. Undergraduate programs may attach a copy of the major requirements from the online bulletin. Graduate programs may provide a list of general requirements for the major.
5. Area of Emphasis Title (as it will appear in the *Bulletin*): Cybersecurity
6. Proposed starting date: Fall 2016
7. Area of Emphasis Description:
Include prefixes, numbers and titles of required courses, number of credit hours required; residency requirements (if any); and grade requirements (if any). Graduate Areas of Emphasis may refer to groups of courses if necessary.

Cybersecurity

Choose at least 12 hours of courses, including CSCI 4250/6250, Cyber Security (4 hours), and the remainder taken as electives from the following:

CSCI 4730/6730, Operating Systems (4 hours)
CSCI 4760/6760, Computer Networks (4 hours)
CSCI 4780/6780, Distributed Computing Systems (4 hours)

Computer Science - B.S.

DEGREE REQUIREMENTS

Entrance Requirements for the Major

General Education Core Curriculum
(Selected with the advice of an academic advisor)

Areas I II III IV V

Area VI

Major Requirements

College-wide Requirements must be satisfied in order to graduate with this major

TOTAL DEGREE HOURS 120 hours

I. FOUNDATION COURSES (9 HOURS)

ENGL 1101 or ENGL 1101E or ENGL 1101S
ENGL 1102 or ENGL 1102E or ENGL 1103 or ENGL 1050H or ENGL 1060H
MATH 1113 or MATH 1113E or MATH 2200 or MATH 2250 or MATH 2250E or MATH
2300H or MATH 2400 or MATH 2400H or MATH 2410 or MATH 2410H

II. SCIENCES (7-8 HOURS)

At least one of the physical science or life science courses must include a laboratory.

Physical Sciences (3-4 hours)

Preferred Course(s): Please consider the Franklin College's Physical Sciences requirement when selecting courses from the Core Curriculum. Some courses approved for the core curriculum do not satisfy the Franklin College requirement.

Life Sciences (3-4 hours)

Preferred Course(s): Please consider the Franklin College's Biological Sciences requirement when selecting courses from the Core Curriculum. Some courses approved for the core curriculum do not satisfy the Franklin College requirement.

III. QUANTITATIVE REASONING (3-4 HOURS)

Preferred Course(s): CSCI 1301-1301L

IV. WORLD LANGUAGES AND CULTURE, HUMANITIES AND THE ARTS (12 HOURS)

Note: Course credit received as a result of a score on a departmental foreign language placement test will not satisfy the General Education Core Curriculum requirements in Area IV, World Languages and Culture, Humanities and the Arts.

World Languages and Culture (9 hours)

No preferred courses for this area. See Core Curriculum view.

Humanities and the Arts (3 hours)

No preferred courses for this area. See Core Curriculum view.

V. SOCIAL SCIENCES (9 HOURS)

- Students who have not met the Georgia and U.S. Constitution requirement by examination should enroll in [POLS 1101](#) or [POLS 1101E](#) or [POLS 1105H](#).
- A passing grade on an examination on the history of the United States and Georgia is required to satisfy the United States and Georgia History Requirement for all persons receiving a baccalaureate degree from the University, unless exempted by one of the following courses: [HIST 2111](#) or [HIST 2111E](#) or [HIST 2111H](#), [HIST 2112](#) or [HIST 2112E](#) or [HIST 2112H](#). Examinations are given at University Testing Services. Reexamination is permitted. Contact University Testing Services at (706) 542-3183 for information.

Preferred Course(s): ([HIST 2111](#) or [HIST 2111E](#) or [HIST 2111H](#) or [HIST 2112](#) or [HIST 2112E](#) or [HIST 2112H](#)) and [POLS 1101](#) or [POLS 1101E](#) or [POLS 1105H](#)

Area VI

[CSCI 1302](#)

[CSCI 2670](#)

[CSCI 2720](#)

[MATH 2250](#) or [MATH 2250E](#)

If any of the courses in Area VI have been used to satisfy Areas II-V of the Core Curriculum, General Electives may be taken here. (Refer to College-wide requirements when selecting General Electives)

Note: Computer Science requires individual review of non-equivalent transfer courses before they can be used to satisfy Area VI and Major Requirements.

Entrance Requirements

Grade of "C" (2.0) or higher is required in all Area VI courses and prerequisite courses [CSCI 1301-1301L](#), [CSCI 1730](#) to complete the Computer Science major.

MAJOR REQUIREMENTS

A baccalaureate degree program must require at least 21 semester hours of upper division courses in the major field and at least 39 semester hours of upper division work overall. Students in the Franklin College must earn a grade of "C" (2.0) or better in major required courses.

Required Courses (15 hours)

(All major coursework must be completed with a grade "C" (2.0) or higher.)

CSCI 4720

Application Design Group - choose one course from the following:

CSCI 4050/6050

CSCI 4370/6370

Systems Design Group - choose one course from the following:

CSCI 4570/6570

CSCI 4730/6730

CSCI 4760/6760

Computing, Ethics, and Society:

CSCI 3030 or CSCI 3030H

Major Electives (12 hours)

Choose an additional twelve (12) hours of CSCI 4000/6000-level courses except CSCI 4150/6150. Required courses and major electives may not overlap.

All major electives and major-related electives must be completed with a grade of "C"(2.0) or higher.

Note: Restrictions on total hours are listed in the course description for CSCI 4900/6900 and CSCI 4950/6950.

Major Related Electives (15 hours)

Major-related and major elective courses may not overlap.

1) Choose eleven (11) hours of computer science (CSCI), mathematics (MATH), or statistics (STAT) courses from the following:

CSCI 2150-2150L

CSCI 4150/6150

MATH 2260*

MATH 2270

MATH 2400

MATH 2410/MATH 2410H

MATH 2500

MATH 2700

MATH 3000

MATH 3300

MATH 3500/MATH 3500H

MATH 3510/MATH 3510H

STAT 2000/STAT 2100H*

STAT 4210

NOTE: Choosing seven (7) of these hours from upper-division coursework will help meet the requirement of 39 hours of upper-division coursework overall.

*If MATH 2260 or STAT 2000/STAT 2100H was taken to satisfy core curriculum requirements, students must select another course to satisfy major-related requirements.

2) Choose an additional 4-hour physical or biological science course with a laboratory from the Franklin College of Arts and Sciences requirements found at: http://franklin.uqa.edu/students/college_degree_requirements.php (This course is in addition to those used to fulfill Area II requirements and General Electives.

Teamwork Requirement

Each student must take 1 team-based course. The following courses currently satisfy the teamwork requirement:

CSCI 4050/6050

CSCI 4300

CSCI(ARTI) 4530/6530

CSCI 4800/6800

Courses satisfying the teamwork requirement may simultaneously fulfill other major related requirements.

Areas of Emphasis

In addition to fulfilling the major requirements (15 hours), major electives (12 hours), and major-related electives (15 hours) of the major in computer science, the student may elect to specialize in one of the ~~six~~ eight areas of emphasis listed below. Courses may satisfy both requirements for the major and requirements for an area of emphasis.

Computer Systems

Choose at least 12 hours from the following:

CSCI 4250/6250

CSCI 4570/6570

CSCI 4730/6730

CSCI 4760/6760

CSCI 4780/6780

Software Design

Choose at least 12 hours from the following:

CSCI 4050/6050

CSCI 4210/6210

CSCI 4370/6370

CSCI 4500/6500

CSCI 4570/6570

Computational Science and Visualization

At least one course taken as elective from each of the following groups: (total at least 12 hours)

CSCI 4140/6140

CSCI 4150/6150

CSCI 4800/6800

CSCI 4810/6810

CSCI 4210/6210

CSCI 4470/6470

CSCI 4490/6490

CSCI 4850/6850

Internet and Information Technology

Choose 12 hours from the following:

CSCI 4300

CSCI 4330/6330

CSCI 4350/6350

CSCI 4370/6370

Theoretical Computer Science

Choose at least 12 hours of courses including CSCI 4470/6470 and the remainder taken as electives from the following:

MATH 3000 or MATH 3300

CSCI 4490/6490

CSCI(MATH)(PHYS) 4612/6612

CSCI 4740/6740

MATH(CSCI) 4670/6670

MATH(CSCI) 4690/6690

Artificial Intelligence (AI)

Choose at least 12 hours of courses including CSCI(PHIL) 4550/6550 and the remainder taken as electives from the following:

CSCI 4070/6070

CSCI 4330/6330

CSCI(ARTI) 4530/6530

CSCI(ARTI) 4540/6540

CSCI 4560/6560

CSCI 4800/6800

Applied Data Science

Choose 12 hours from the following:

CSCI 4350/6350

CSCI 4360/6360

CSCI 4370/6370

CSCI 4380/6380

Cybersecurity

Choose at least 12 hours of courses including CSCI 4250/6250 and the remainder taken as electives from the following:

CSCI 4730/6730

CSCI 4760/6760

CSCI 4780/6780

General Electives (18 hours)

Upper division (0-12 hours)

Any level (6-18 hours)

(This total does not include the 1-hour P.E. requirement)