April 23, 2014

UNIVERSITY CURRICULUM COMMITTEE – 2013-2014
Mr. David E. Shipley, Chair
Agricultural and Environmental Sciences - Dr. William K. Vencill
Arts and Sciences - Dr. Roxanne Eberle (Arts)
                     Dr. Rodney Mauricio (Sciences)
Business - Dr. William D. Lastrapes
Ecology - Dr. James W. Porter
Education - Dr. William G. Wraga
Engineering - Dr. Sidney Thompson
Environment and Design - Mr. David Spooner
Family and Consumer Sciences - Dr. Silvia Giraudo
Forestry and Natural Resources - Dr. Sarah F. Covert
Journalism and Mass Communication - Dr. Alison F. Alexander
Law - No representative
Pharmacy - Dr. Cory Momany
Public and International Affairs - Dr. Robert Grafstein
Public Health - Dr. Katie D. Hein
Social Work - Dr. Kristina Jaskyte
Veterinary Medicine - Dr. Scott A. Brown
Graduate School - Dr. Tracie E. Costantino
Ex-Officio - Provost Pamela S. Whitten
Undergraduate Student Representative - Ms. Hadley Dreibelbis
Graduate Student Representative - Ms. Margaret Robbins

Dear Colleagues:

The attached proposal for a new Area of Emphasis in Applied Mathematics under the major in Mathematics (B.S.) will be an agenda item for the April 30, 2014, Full University Curriculum Committee meeting.

Sincerely,

David E. Shipley, Chair
University Curriculum Committee

cc: Provost Pamela S. Whitten
        Dr. Laura D. Jolly

Committee on Facilities, Committee on Intercollegiate Athletics, Committee on Statutes, Bylaws, and Committees, Committee on Student Affairs, Curriculum Committee, Educational Affairs Committee, Executive Committee, Faculty Admissions Committee, Faculty Affairs Committee, Faculty Grievance Committee, Faculty Post-Tenure Review Appeals Committee, Faculty/ Staff Parking Appeals Committee, Human Resources Committee, Strategic Planning Committee, University Libraries Committee, University Promotion and Tenure Appeals Committee
An Equal Opportunity/Affirmative Action Institution

April 11, 2014

Dr. Alan Dorsey
Dean, Franklin College of Arts and Sciences
Old College

Dear Dean Dorsey:

Please find enclosed our proposal for an Area of Emphasis in Applied Mathematics within the Mathematics undergraduate major. The proposed program would offer an alternative route to completing a B.S. in Mathematics, substituting course work with direct scientific applications for the some of the more theoretical course requirements in the standard major.

In preparing this proposal we have benefited from extensive consultations with Fiona Liken of the Office of the Vice President for Instruction, so we are confident that it complies with the relevant UGA policies.

The faculty of the Department yesterday voted enthusiastically and unanimously (30-0) in favor of the proposal. We feel that it will serve the undergraduates of the Franklin College well, and may draw significant numbers of new students to major in our subject.

Sincerely,

Malcolm R. Adams
Head, Department of Mathematics

Approved

Kecia M. Thomas
Interim Associate Dean

<center>**PROPOSAL FOR AREA OF EMPHASIS**</center>

1. School/College: Franklin College of Arts and Sciences

2. Department/Division: Mathematics

3. Major: Mathematics (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.

   (See attached.)

5. Area of Emphasis Title (as it will appear in the *Bulletin*): Applied Mathematics

6. Proposed starting date: Semester after approval

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.

   Area of Emphasis in Applied Mathematics
   MATH 3100, Sequences and Series (3 hours)
   MATH 4500/6500, Numerical Analysis I (3 hours)

   Choose two of the following:
   MATH 4600/6600, Probability (3 hours)
   MATH 4700/6700, Qualitative Ordinary Differential Equations (3 hours)
   MATH 4720/6720, Introduction to Partial Differential Equations (3 hours)

   Four additional three-hour MATH courses at the 3000-level or above, not including MATH 3220 (Advanced Problem Solving), subject to the advisor's approval. A major program may include *no more than two* courses among MATH 4760/6760 (Mathematics and Music), MATH 4850/6850 (History of Mathematics), MATH 4900/6900 (Topics in Mathematics), MATH 4950 (Research in Mathematics) and may include *only* MATH 5200/7200 (Foundations of Geometry I) and MATH 5210/7210 (Foundations of Geometry II) at the 5000-level.

   Total hours = 24 hours

Mathematics - B.S. DRAFT

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 1102M or ENGL 1050H or ENGL 1060H
MATH 1113 or MATH 2200 or MATH 2250 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): PHYS 1211-1211L or PHYS 1311-1311L

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): MATH 2250 or MATH 2260 or MATH 2400 or MATH 2400H

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

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.

- 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, HIST 2112. Examinations are given at University Testing Services. Reexamination is permitted. Contact University Testing Services at (706) 542-3183 for information.

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

Area VI
MATH 2260 or MATH 2310H or MATH 2410 or MATH 2410H
MATH 2270 or MATH 2500 (can be waived by MATH 3510 or MATH 3510H)
MATH 2700 (can be waived by MATH 4700/6700 or MATH 4720/6720)

Choose at least two courses from the following:
PHYS 1211-1211L or PHYS 1311-1311L

PHYS 1212-1212L or PHYS 1312-1312L (or higher, except PHYS 1990)
CSCI 1301-1301L
CSCI 1302
CSCI 2670
CSCI 2720
STAT 4210

If after completing the above requirements, the University requirement of 18 hours in Area VI is not satisfied, any other courses can be used to complete the 18 hours in Area VI. The Mathematics Department suggests courses in a foreign language or courses listed above.

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

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 (24 hours)
(A minimum grade of "C" (2.0) or better must be earned in any upper-division MATH course.)

MATH 4000/6000

Choose one of the following:
MATH 4100/6100
MATH 4150/6150
MATH 4250/6250

Six additional three-hour MATH courses at the 3000-level or above, not including MATH 3220, subject to the advisor's approval. A major program may include *no more than two* courses among MATH 4760/6760, MATH 4780/6780, MATH 4790, MATH 4850/6850, MATH 4900/6900, MATH 4950 and may include *only* MATH 5200/7200 and MATH 5210/7210 at the 5000-level.

Area of Emphasis in Applied Mathematics (24 hours)

MATH 3100

MATH 4500/6500

Choose two of the following:
MATH 4600/6600
MATH 4700/6700
MATH 4720/6720

Four additional three-hour MATH courses at the 3000-level or above, not including MATH 3220, subject to the advisor's approval. A major program may include *no more than two* courses among MATH 4760/6760, MATH 4850/6850, MATH 4900/6900, MATH 4950 and may include *only* MATH 5200/7200 and MATH 5210/7210 at the 5000-level.

General Electives (36 hours)
(Refer to College-wide requirements when selecting general electives.)
Upper division (15 hours)
Any level (21 hours)

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