



Office of Academic Affairs

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TO: Faculty Council Members  
FROM: Sonya Hardin, Faculty President  
DATE: September 24, 2008  
RE: Consent Calendar

Attached is the Consent Calendar (See Article V, Section 3.A (3 & 4), J. (3 & 5) and K.3 of the Standing Rules of the Faculty Council.) consisting of these proposals:

- A & S 3108 Establishment of Aerospace Studies Minor
- A & S 3208 Changes in Curricula in Geographic Information Sciences & Technology

Below are the catalog copy descriptions. If you wish to read the full proposals, they are posted on the Academic Affairs website.

If there is an objection regarding this proposal, it must be registered with the Faculty Governance Secretary (Julie Putnam, ext.2226) by **5 PM on October 8, 2008**. If no objections are registered, they will stand approved.

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Catalog Copy:

### **Establishment of Aerospace Studies Minor**

**Proposed Catalog Copy:** while the minor is most appropriate for students wishing to pursue a commission as an officer in the United States Air Force, it is open to all students at the university without incurring any military obligation. A minor in Aerospace Studies provides expertise in military law, national security issues, airpower history, leadership, teambuilding, as well as written and oral communication skills. Experience gained through this minor would be an advantage to any student interested in future government employment.

**Grade Requirements:** the cumulative grade-point average (GPA) for all courses used toward the minor must be 2.0 or greater, with no course grade lower than a C.

Credit Hour Requirements: a minimum of 16 credits in departmental courses, 12 of which must be upper division.

Course	Title	Credits
<b>FRESHMAN AND SOPHOMORE (C or Better)</b>		
AERO 1101	The Air Force Today I	1
AERO 1102	The Air Force Today II	1
AERO 2101	The Development of Air Power I	1
AERO 2102	The Development of Air Power II	1
<b>JUNIOR AND SENIOR (C or Better)</b>		
AERO 3101	Leadership and Management	3 (O)
AERO 3102	Defense Administration and Military Management	3 (O)
AERO 3201	National Security Issues in Contemporary American Society.	3 (O)
AERO 3202	The Defense Leader: Perspectives on Ethics and Justice.	3 (O)
	Department of Aerospace Studies (Lower Division)	4
	Department of Aerospace Studies (Upper Division)	12
<b>Total Hrs</b>		<b>16</b>

## Changes in Curricula in Geographic Information Sciences & Technology

### 1. Changes in Requirements for Majors in the BA and BS in Geography

Delete the requirement of Geog 2100 Maps and Graphs and 2101 Maps and Graphs Lab for the majors in the BA and BS in Geography.

Add the requirement of Geog 2103, Elements of GIScience and Technologies as a requirement for the BA and BS in Geography.

Add the requirement of Geog 4120, Fundamentals of GIS, as a requirement for the BS in Geography.

### 2. Changes in Existing Courses in Geography -- Content To Be Modified and Course description to be modified)

Geog 2103 Elements of GIScience and Technologies (proposal is attached). Change course from 3 credit hour elective to 4 credit hour, lab based course.

New course description:

GEOG 2103. Elements of GIScience and Technologies (4). This course covers the fundamentals of Geographic Information Science (GIS), related technologies used in GIS, and how GIScience is being applied in such diverse fields as planning, marketing, criminal justice, health, natural resources, information technology and engineering. Students will learn the processes to collect, organize, analyze and display geographic data using GIS and will be introduced to related technologies including GPS, Air Photo-Interpretation and basics of Remote Sensing. Students will also cover mapping basics including scale, projections, coordinate systems, data classification, and cartographic design. (Fall and Spring)

Geog 4103/5103 Computer Programming for GIS Applications (proposal is attached)  
Change in catalog description.

New course description:

GEOG 4103. Computer Programming for GIS Applications. (3) Prerequisite: GEOG 2103 or consent of instructor. Software program development for GIS and mapping applications using high level programming languages such as Visual Basic. Emphasis on the design and implementation of geographic data structures and algorithms. (Fall)

Geog 4120/5120 Fundamentals of GIS. Proposed change in course prerequisite and change in catalog description to make Geog 2103 the prerequisite for this course.

#### New Catalog Copy

GEOG 4120. Fundamentals of Geographic Information Systems. (4) Prerequisite: GEOG 2103 or consent of instructor. Development, current state-of-the-art and future trends in geographic information processing with emphasis on data gathering, storage, and retrieval, analytical capabilities and display technologies. A laboratory component will include development and completion of an applied GIS research project. Three lecture hours, one two-hour lab per week. (Fall, Spring)

GEOG 5120. Fundamentals of Geographic Information Systems. (4) Prerequisite: Development, current state-of-the-art and future trends in geographic information processing with emphasis on data gathering, storage, and retrieval, analytical capabilities and display technologies. A laboratory component will include development and completion of an applied GIS research project. Three lecture hours, one two-hour lab per week. (Fall, Spring)

### 3. New Courses To Be Added to the Geography Undergraduate and Graduate Curriculum (syllabi and consultations are attached)

**Geog 4131/5131 Environmental Modeling with GIS** (4 credits). Prerequisite: Geog 4120/5120 or consent of the instructor. Theories and practices of modeling the environment with GIS. Topics include types of spatial modeling frameworks; GIS data

sources and measurement technologies for environmental modeling; development, calibration, and validation of environmental models; 3-dimensional modeling and visualization of physical processes; and spatial analysis of human-environment interactions. (Fall or Spring).

**Geog 4132/5132 Spatial Modeling for Social and Economic Applications (4 credits).**

Prerequisite: Geog 4120/5120, or consent of the instructor. Theories and practices of spatial modeling with social and economic applications. Topics include (1) simulation models for land use change, smart growth, object movement, and homeland security planning; (2) integrated models – spatial – non-spatial, topological – ontological, deterministic – stochastic; (3) agent-based models. Lab exercises employ various spatial modeling tools (Fall or Spring).

**Geog 4150/5150 Spatial Database Development with GPS and GIS (4 credits).**

Prerequisites: Geog 4120/5120, or permission of instructor. This course consists of tutorials, readings, projects, and discussions of how geo-technologies can be used to create digital geographic databases: designing conceptual databases using entity-relationship approach, transforming GPS data, geo-registering scanned base maps, digitizing vector features, entering attribute data, and developing Mobile GIS applications (Fall or Spring).