Troy University Undergraduate Academic Council Minutes
November 10, 2016
Meeting location: Collegeview Conference Room with additional locations by WebEx.

Call to Order

UGAC Chair Shellye Vardaman called the meeting to order at 3:00 and Christine Haug called the roll.

Voting Members Present- Heidi Beattie, Kanessa Doss, Carrie Lee Gardner, Margaret Gnoinska, Jonathan Harrington, Jerry Johnson, Rita Jones, Barbara Metzger, Meg Milligan, Carol Moore, Ben Robertson, Joe Teng and Frank Thompson.

Voting Members Absent- Tim Buckner (voted prior), Joel Hammonds, Rachel Hooper (excused), Rita Jones, Karen Ross (in class), and Rick Turpin.

Guest attending – Larry Blocher, Janet Gaston, and Diane Porter.

Approval of Minutes and Agenda

Motion was made by Jerry Johnson to accept the minutes and agenda.

Seconded by Jonathan Harrington.

Motion Passed.

Legend: **New Courses**
Revised Courses /Majors/Minors
Renumbered Courses
New Majors or Minors
~~**Eliminated Courses**~~

COLLEGE OF ARTS & SCIENCES

1. Janet Gaston was present to discuss prerequisite changes for Surveying and Geomatics Sciences Courses.

GEM 2220 **Basics of Surveying (3)**
This course provides each student an introduction to measurement theory, instrumentation, measurement systems, measurement computations, data accuracy and precision. The structure of the field of geomatics is explored. Major components of the course are survey statistics, traverse computations, coordinate systems and datums, elevations, and mapping. The use of computer-aided drawing software to produce maps and plats is required.
~~Prerequisites: PHY 2252.~~ MTH 1114
Co-requisite: GEM L220

GEM 3366 **Photogrammetry and Remote Sensing (3)**
Introduction to metrical photogrammetry, interpretative photogrammetry, and remote sensing. Focuses on the theory, instrumentation, and practical application of photogrammetry to the problem of mapping the earth's surface. Remote sensing concepts, principles, sensors, and specific satellite platforms are covered in the course. Hands-on exercises are given that makes use of software to create stereo models, orthophotos, and perform image processing.
~~*Prerequisite: GEM 2220.*~~

GEM 3379 **Introduction to Least Squares Adjustment (3)**
The theoretical principle of error propagation and least squares adjustment theory to compute optimized solutions to geomatics problems involving redundant data. The use of mathematical scripts and least squares software to solve spatial data adjustment problems in land surveying and geomatics applications.
Prerequisites: ~~MTH 1126,~~ MTH 1125, MTH 2210, GEM 3330.

GEM 3390 **Fundamentals of Geographic Information and Analysis (3)**
This course is the first course in a one-year study of the fundamentals of Geographic Information Systems (GIS). Topics of study are digital mapping, data capture, data conversion, data structures, and spatial data concepts. Hands-on exercises are included using some of the common GIS software.
~~*Prerequisites: MTH 1112, IS 2241.*~~

GEM 4408 **Geodesy and Geodetics (3)**
Focuses on mathematical models of the earth, survey astronomy, the earth's gravity field, and coordinate systems, and geodetic reference framework. Important skills developed in this course include coordinate and datums transformations, map projections, astronomic observation, geodetic computations, surveying network design, and geodetic control survey.
Prerequisites: MTH 1125~~, PHY 2253.~~

GEM 4409 **Hydrology (3)**
Explores several models used to compute runoff estimates based on particular rainfall events. Course topics are the hydrologic cycle, rainfall intensity, runoff models, hydrographs, storm sewer design, culvert design, open channel flows, watershed delineation, water detention and retention structures, and onsite sewage disposal systems.
Prerequisite~~: PHY 2253~~ GEM 3330. Co-requisite: GEM L409.

GEM 4490 **Geomatics Capstone (1)**
This course prepares students for the national Fundamentals of Surveying exam to cover all aspects of the exam.
Prerequisite ~~GEO 4409.~~ GEM 4409, MTH 1126

Motion was made by Meg Milligan.

Second was made by Kanessa Doss.

Motion Passed.

2. Janet Gaston was present to discuss an addition to note for the Mathematics Major.

Specialized *General Studies* Requirements
Area III

MTH 1125	(4)	Calculus I

Area V Requirements

TROY 1101	(1)	University Orientation
MTH 2210	(3)	Introductory Statistics
MTH 2220	(3)	Computer Programming for Mathematics

Requirements for the Major

MTH 1126	(4)	Calculus II
MTH 2227	(4)	Calculus III
MTH 3311	(3)	Differential Equations
MTH 3318	(3)	Introduction to Advanced Mathematics
MTH 3331	(3)	Linear Algebra
MTH 4424	(3)	Real Analysis I
MTH 4441	(3)	Abstract Algebra I

Select one of the following:

MTH 4425	(3)	Real Analysis II
MTH 4442	(3)	Abstract Algebra II

OR both of the following:

MTH 4451	(3)	Mathematical Statistics I
MTH 4452	(3)	Mathematical Statistics II

Students selecting MTH 4451 and MTH 4452: select nine more hours of mathematics courses at the 3000 level and above (excluding MTH 4481).

Students selecting MTH 4425 or MTH 4442: select 12 hours of mathematics courses at the 3000 level and above (excluding MTH 4481).

Students seeking Alabama teacher certification must select MTH 3325 and MTH 4451 and MTH 4452.

Motion was made by Meg Milligan.

Second was made by Jerry Johnson.

Motion Passed.

3. Janet Gaston was present to discuss prerequisite changes for BIO 2220/L220.

BIO 2220 **Principles of Cell Biology (3)**
Introduction to cell structure and function with emphasis on organelle structure, metabolism, cell cycle, genetics, and gene function.
Prerequisites: ~~BIO 1101/L101.~~ BIO 1100/L100
Co-requisite: BIO L220. Credit will not be given toward major/program if taken at same time or after BIO 3320 and BIO 4482.

BIO L220 **Principles of Cell Biology Lab (1)**
Laboratory studies of cell biology with an emphasis on cell structure, function, experimental techniques, and data collection and analyses.
Prerequisite: ~~BIO 1101/L101.~~ BIO 1100/L100
Co-requisite: BIO 2220. Credit will not be given toward major/program if taken at same time or after BIO L320 and BIO L482.

Motion was made by Carol Moore.

Second was made by Jonathan Harrington.

Motion Passed.

4. Janet Gaston was present to discuss adding a new course for Physics: Seminar in Relativity.

PHY 44XX **Seminar in Relativity (1)**
Selected topics of interest within the field of relativity. *Note: may be taken multiple times for credit.*

Dr. Fulmer recommended deleted the note and enter the course as 3 different numbers for Financial Aid purposes.

Motion was made by Frank Hammonds to approve the course with editing.

Second was made by Margaret Gnionska.

PHY 4425-4427 Seminar in Relativity (1)
Selected topics of interest within the field of relativity. *Note: may be taken up to three times for credit.*

The changes above were created.

Motion Passed.

5. Janet Gaston was present to discuss deactivation of PHY4480 Introduction to Black Holes & Cosmology.

~~**PHY 4480 Introduction to Black Holes & Cosmology (3)**~~
~~Topics include spherically symmetric black holes, the event horizon, singularities in spacetime, big bang theory and the particle content of the universe.~~
~~*Prerequisite: PHY 3325, PHY 4478*~~

Motion was made by Joe Teng.

Second was made by Carrie Lee Gardner.

Motion Passed.

6. Janet Gaston was present to discuss change in title and course description for PHY 4460 and PHY 4478.

Current:

PHY 4460 ~~**Special**~~ **Relativity (3)**
~~In this course, students will be introduced to the principles of relativity and some of its immediate consequences. Topics covered will include inertial observers, time dilation, length contraction, particle dynamics, massless particles, 4-D spacetime, field and energy momentum tensors.~~
Prerequisites: MTH 3310, PHY 2263/PHY L263.

Proposed:

PHY 4460 **Relativity I (3)**
Topics include Lorentz transformation, inertial coordinates, causal Structure of Spacetime, equivalence principle, gravitational effects in SR, curved Spacetime, and introduction to black holes.
Prerequisites: MTH 3310, PHY 2263/PHY L263.
Co-requisite: PHY 4435

Current:

PHY 4478 ~~**Introduction to General**~~ **Relativity (3)**
~~Topics include curvature of spacetime, differential geometry, tensor calculus, the Einstein field equation and gravitational waves. Additionally, students will become familiar with recent experimental advances and current gravity probes and detection methods.~~

Prerequisites: Permission of instructor.

Proposed:

PHY 4478 **Relativity II (3)**
Topics include rotating black holes, Hawking radiation, cosmology, tensor calculus, and Einstein field equations.
Prerequisites: Permission of instructor.

Motion was made by Margaret Gnoinska.

Second was made by Jonathan Harrington.

Motion Passed.

7. Janet Gaston was present to discuss change in prerequisites for PHY 4420, PHY 4435 and PHY 4445.

PHY 4420 **Mechanics (3)**
Introduction to the kinematics and dynamics of particles: escape and terminal velocity, drag, rotational motion and rotating frames, Foucault pendulum, planetary motion and Kepler's laws.
Prerequisites: ~~PHY 2253/L233 and PHY 3320.~~ PHY 2263/L263

PHY 4435 **Electricity and Magnetism (3)**
Topics include static electric and magnetic phenomena. electric and magnetic potentials, motion of charged particles, dielectric and magnetic media,
and fields in conductors.
Prerequisite: ~~PHY 3320~~ PHY 2263/L263, MTH 2227

PHY 4445 **Quantum Mechanics I (3)**
Introduction to the principles of quantum mechanics, one dimensional systems including the square well and the simple harmonic oscillator, uncertainty relations and multi-particle systems.
Prerequisites: PHY 3310, ~~PHY 3320.~~ MTH 2227

Motion was made by Jerry Johnson.

Second was made by Joe Teng.

Motion Passed.

8. Janet Gaston was present to discuss changes hours and addition of notes in the Physics Major and Minor.

Current:

PHYSICS MAJOR (37 HOURS)
Area V (22 Hours)

TROY 1101	(1)	University Orientation
CS 2250	(3)	Computer Science I
MTH 1126	(4)	Calculus II
PHY 2262	(3)	Physics I w/Calculus
PHY L262	(1)	Physics I w/Calculus Lab

Required courses (~~27~~ hours)

~~MTH 2227~~	~~(4)~~	~~Calculus III~~
~~MTH 3364~~	~~(3)~~	~~Vector Calculus~~
PHY 2263	(3)	Physics II w/Calculus
PHY L263	(1)	Physics II w/Calculus Lab
PHY 3310	(3)	Modern Physics
PHY L310	(1)	Modern Physics Lab
PHY 3325	(3)	Thermodynamics
PHY 4420	(3)	Mechanics
PHY 4435	(3)	Electricity & Magnetism
PHY 4445	(3)	Quantum Mechanics I

Select a minimum of ~~10 semester~~ hours from the courses listed below:

PHY 3320	(3)	Mathematical Methods for Physicists
PHY 3321	(3)	Equations of Mathematical Physics
PHY 3359	(3)	Waves and Optics
PHY L359	(1)	Waves and Optics Lab
PHY 4438	(3)	Electromagnetic Fields
PHY 4440	(3)	Dynamics of Particles & Systems
PHY 4446	(3)	Quantum Mechanics II
PHY 4460	(3)	Special Relativity
PHY 4470	(3)	Nuclear Physics
PHY 4475	(3)	Particle Physics
PHY 4478	(3)	Intro to General Relativity
PHY 4480	(3)	Black Holes & Cosmology
PHY 4482	(3)	Introduction to String Theory
PHY 4495	(3)	Topics in Physics
PHY 4491-92	(3)	Guided Independent Research
PHY 4493-94	(3)	Guided Independent Study

Select any minor offered by Troy University (18 Hours)

PHYSICS MINOR (19 HOURS)

PHY 2262	(3)	Physics I Calculus
PHY L262	(1)	Physics I with Calculus Lab
PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus Lab
PHY 3310	(3)	Modern Physics
PHY L310	(1)	Modern Physics Lab

Select an additional seven hours of adviser-approved, upper-level physics courses.

Proposed:

PHYSICS MAJOR (37 HOURS)

Area V (22 Hours)

TROY 1101	(1)	University Orientation
CS 2250	(3)	Computer Science I
MTH 1125	(4)	Calculus I *
MTH 1126	(4)	Calculus II*
PHY 2262	(3)	Physics I w/Calculus
PHY L262	(1)	Physics I w/Calculus Lab

*Note: *Students minoring in Mathematics may replace these courses with free electives.*

Required courses (20 hours)

PHY 2263	(3)	Physics II w/Calculus
PHY L263	(1)	Physics II w/Calculus Lab
PHY 3310	(3)	Modern Physics
PHY L310	(1)	Modern Physics Lab
PHY 3325	(3)	Thermodynamics
PHY 4420	(3)	Mechanics
PHY 4435	(3)	Electricity & Magnetism

PHY 4445	(3)	Quantum Mechanics I

Select a minimum of 17 semester hours from the courses listed below:

MTH 2227	(4)	Calculus III
MTH 3364	(3)	Vector Calculus
PHY 3320	(3)	Mathematical Methods for Physicists
PHY 3321	(3)	Equations of Mathematical Physics
PHY 3359	(3)	Waves and Optics
PHY L359	(1)	Waves and Optics Lab
PHY 4438	(3)	Electromagnetic Fields
PHY 4440	(3)	Dynamics of Particles & Systems
PHY 4446	(3)	Quantum Mechanics II
PHY 4460	(3)	Special Relativity
PHY 4470	(3)	Nuclear Physics
PHY 4475	(3)	Particle Physics
PHY 4478	(3)	Intro to General Relativity
PHY 4480	(3)	Black Holes & Cosmology
PHY 4482	(3)	Introduction to String Theory
PHY 4495	(3)	Topics in Physics
PHY 4491-92	(3)	Guided Independent Research
PHY 4493-94	(3)	Guided Independent Study

Select any minor offered by Troy University (18 Hours)

PHYSICS MINOR (18-19 HOURS)

PHY 2262	(3)	Physics I Calculus
PHY L262	(1)	Physics I with Calculus Lab
PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus Lab
PHY 3310	(3)	Modern Physics
PHY L310	(1)	Modern Physics Lab

Select an additional six to seven hours of adviser-approved, upper-level physics courses.

Motion was made by Kanessa Doss.

Second was made by Carol Moore.

Motion Passed.

SORRELL COLLEGE OF BUSINESS

No Agenda Items

COLLEGE OF COMMUNICATION AND FINE ARTS

1. Dr. Blocher was present to discuss adding 4 new music courses to the catalog.

MUS 11XX World Music Workshop (2)
A hands-on course that surveys traditional music from around the globe, with an emphasis on exploratory play.

MUS 11XX Folk Music of the Americas (1)
An ensemble that plays traditional music from many regions throughout the Americas. The group performs old time songs and folk tunes from the United States, as well as indigenous songs, folk songs and tunes from Central and South America, and syncretic music, exploring a broad variety of American cultural traditions.

MUS 11XX Celtic Ensemble (1)
A traditional music group that performs tunes and songs of Irish, Scottish, Welsh, Galician, Breton, and Scandinavian origins. It has a varied instrumentation and an emphasis on learning melodies aurally.

MUS 11XX Chinese Folk Ensemble (1)
A traditional music group dedicated to promoting cultural exchange through playing a variety of traditional Chinese instruments and melodies from various regions around the country.

Deletion of Music Ensembles*

Motion was made by Meg Milligan.

Second was made by Carrie Lee Gardner.

Motion Passed.

COLLEGE OF EDUCATION

No Agenda Items

COLLEGE OF HEALTH AND HUMAN SERVICES

No Agenda Items

Information Items: - Establishment of Troy University Center for Public Service located on the Montgomery campus.

Meeting adjourned at 3:31 pm.

Motion was made by Heidi Beattie to adjourn.

Seconded by Frank Hammonds.