|  |
| --- |
| Logo_Left |
| Office of the Registrar  Dept 3964; 1000 East University Ave. • Laramie, WY 82071-3964  (307) 766-5272 • fax (307) 766-3960 • e-mail: registrar@uwyo.edu • www.uwyo.edu |

# University Course Review Committee

**Minutes**

**Meeting #300**

# September 18, 2019 Tobin Conference Room

# 3:00 PM Knight Hall Room 238

## Part I – Consent Agenda

* ***College of Agriculture and Natural Resources***

**PLNT**

**4790/5790 TOPICS:, 1.0-4.0 hrs. (Max. 10)**

***Current Course Description:*** 4790: Dual listed with PLNT 5790. Prerequisite: senior standing. (Offered based on sufficient demand and resources)

5790: Dual listed with PLNT 4790. Prerequisite: senior standing.

***Requested Change of Course Description:*** 4790: Independent study. Dual listed with PLNT 5790. Prerequisite: senior standing.

5790: Independent study. Dual listed with PLNT 4790. Prerequisite: graduate standing.

***Proposed Term:*** Spring 2020

**Action:** Approved

* ***College of Arts & Sciences***

**BOT**

**3100 PLANTS AND CIVILIZATION, 3.0 hrs.**

***Current Course Description:*** An overview of ways plants have and will continue to influence human civilizations. Botanical origins and socio-economic impacts of deforestation, plant fibers, stimulants, drugs and medicinals, wood products, foods and other plant-derived resources is discussed. Students write short papers building skills in research, critical thinking, argumentation, and citation strength. *Prerequisite:* LIFE 1000 or 1010. (Normally offered spring semester)

***Requested Change of Course Description:*** Overview of past and current roles plants have in human civilizations and culture. Socio-economic impacts of agriculture, famine, deforestation, wealth allocation, politics and technology will be discussed in relation to specific plants and plant products. Examples include plant fibers, stimulants, drugs and medicinals, foods, spices and other plant-derived resources.

***Requested Change of Prerequisite:*** University Studies COM1 or equivalent writing course

***Proposed Term:*** Spring 2020

**Action:** Approved

**MUSC**

**2040 WRITTEN THEORY IV, 3.0 hrs.**

***Current Course Description:*** Second semester of a one-year series. Studies chromatic harmony, contrapuntal techniques, and 20th century practices. *Prerequisite:* MUSC 2030.

***Requested Change of Course Description:*** Fourth semester of a two-year series. Explores the instruments of the band and orchestra, and the capabilities of writing for voices and piano. Arranging for various instrumental combinations and vocal ensembles. *Prerequisite:* MUSC 2030.

***Proposed Term:*** Spring 2020

**Action:** Approved

* ***College of Business***

**DSCI**

**4260 PROJECT MANAGEMENT, 3.0 hrs.**

***Current Course Description:*** Examines the coordination project management activities. This includes the initiation, planning, implementation, control and evaluation of projects.

***Current Prerequisites:*** DSCI 3210 and advanced business standing (EN and SER majors: ES 1060 and junior standing).

***Requested Change of Prerequisites:*** ACCT 1010, MATH 2350 and STAT 2050 or equivalents in each, grades of C or better in each, junior class standing (EN majors: MATH 2200, ES 1060 or equivalent, junior class standing).

***Proposed Term:*** Spring 2020

**Action:** Approved

* ***College of Education***

**PRST**

**5610 INTRODUCTION TO DOCTORAL STUDIES, 3.0 hrs.**

***Current Course Description:*** Introduce incoming doctoral students to the fundamentals of doctoral study for the Ph.D. degree.  Includes developing an understanding of higher education, the organization and purposes of doctoral programs, and the exploration of the roles of teaching, research, and service at the university. Prerequisite: Admission to the program.

***Current Grading System:*** S/U

***Requested Change of Grading System:***A-F (Letter grading)

***Proposed Term:*** Spring 2020

**Action:** Approved

* ***College of Law***

**LAW**

**6130 TORTS I, 3.0 hrs.**

***Current Course Description:*** Study of the methods and policies for allocating risks of harm; intentionally inflicted harms; negligence in its general aspects and its application to products liability, landowners, and automobile traffic; emotional harms; defamation; and fraud.

***Requested Change of Credit Hours:*** 4.0 hrs, Max. 4

***Requested Change of Course Description:*** Study of the methods and policies for allocating risks of harm; intentionally inflicted harms; negligence in its general aspects and its application to products liability, landowners, and automobile traffic; emotional harms; defamation; and fraud. Principal areas of coverage typically include wrongful death, defenses, vicarious liability, strict liability, nuisance, products liability and defamation. If time permits we will also cover privacy, misrepresentation and other topics.

***Proposed Term:*** Spring 2020

**Action:** Approved

**LAW**

**6160 LEGAL WRITING I, 2.0 hrs.**

***Current Course Description:*** In this course students are introduced to the fundamentals of legal reasoning and analysis and the basics of legal writing.

***Requested Change of Credit Hours:*** 3.0 hrs, Max. 3

***Proposed Term:*** Spring 2020

**Action:** Approved

**LAW**

**6990 ADVANCED TOPICS, 3.0 hrs., Max. 3**

***Requested Change of Credit Hours:*** 3.0 hrs, Max. 9

***Proposed Term:*** Spring 2020

**Action:** Approved

* ***Haub School of ENR***

**ESS**

**4950 EXPLORING THE EARTH SYSTEM, 3.0 hrs.**

***Current Course Description:*** Conduct interdisciplinary research on a problem addressing physical, biological, and human components of the Earth System. With several written reports, students will critically review existing literature, define a research question, collect and analyze data, and present their results in a recognized journal format.

***Current Prerequisites:*** ESS 2000 and either ESS 3480 or GEOG 3450

***Requested Change of Course Description:*** Conduct critical and interdisciplinary assessments on complex topics addressing physical, biological, and human components of the Earth System. Through multiple written, oral, and digital communication products, students will work independently and collaboratively to critically review existing literature, define knowledge gaps, analyze evidence, and synthesize results for multiple audiences.

***Requested Change of Prerequisites:*** ESS 1000 and either ESS 3480 or ENR 3450

***Enforce in Banner?***: Yes

***Proposed USP:*** COM3 – will be reviewed by USP committee later this month per Jake Hayden

***Proposed Term:*** Spring 2020

**Action:** Approved

## Part II – Regular Agenda

## Courses to Discontinue

* ***College of Agriculture and Natural Resources***

**MICR**

**4250 BACTERIAL GENETICS LABORATORY, 1.0 hr.**

***Course Description:*** Introduces genetic manipulations of bacteria using molecular genetic techniques. Cross listed with MOLB 4250. Prerequisites: MOLB 2021, MOLB 3000, and LIFE 3050.

***Proposed Term:*** Spring 2020

***Rationale:*** The cross-listed MOLB 4250/5250 was discontinued in 2014 and was replaced by MOLB 4320. However we must have neglected to request removal of the cross-listed MICR 4250. Please remove this from the catalog.

**Action:** Approved

**MICR**

**5440 MICROBIAL GENETICS, 3.0 hrs.**

***Course Description:*** Discusses microbial genetic approaches to study cell function and provides a molecular foundation for understanding how genes work to elicit phenotypes. Dual listed with MICR 4440; Cross-listed with MOLB 5440. Prerequisites: MOLB 2021 and 3000 and LIFE 3050. (Normally offered spring semester).

***Proposed Term:*** Spring 2020

***Rationale:*** MOLB 4440/5440 was revised in 2012 and the new CARF did not indicate a dual listing with MICR 5440 (that the course must have had previously.) Consequently MICR 5440 was left on the books but we would like it to be removed from the catalog because no one has taught this course for as long as we can remember.

**Action:** Approved

* ***College of Law***

**LAW**

**6230 TORTS II, 2.0 hrs., Max. 2**

***Course Description:*** Picks up where Torts I ends. Principal areas of coverage typically include wrongful death, defenses, vicarious liability, strict liability, nuisance, products liability and defamation. If time permits we will also cover privacy, misrepresentation and other topics.

***Proposed Term:*** Spring 2020

***Rationale:*** The law faculty met and approved to change our curriculum and increased the credit hours for Torts I, and Torts II will no longer be taught.

**Action:** Approved

* ***Other***

The following courses will be discontinued as of Spring 2020 at the request of the new GIST department. These courses will be transferred over to the GIST prefix (see additions in this agenda).

BOT 3150, being replaced by GIST 2160 (not equivalent)

BOT/GEOG 4111, being replaced by GIST 3111 (equivalent)

BOT 4130/5130, being replaced by GIST 4130/5130 (equivalent)

BOT/GEOG 4211/5211, being replaced by GIST 4211/5211 (equivalent)

BOT/GEOG 5111, being replaced by GIST 5111 (equivalent)

**Action:** Approved

## Part III – Regular Agenda

## Courses for Addition

* ***College of Agriculture and Natural Resources***

**AGEC**

**1101 FYS: MISPERCEPTIONS IN AGRICULTURE, 3.0 hrs.**

***Proposed USP:*** FYS

***Proposed Term:*** Fall 2019

**Action:** Approved

**FCSC**

**1009 INTRODUCTION TO FAMILY AND CONSUMER SCIENCE, 1.0-3.0 hrs.**

***Proposed Course Description:*** Introduction to Family and Consumer Sciences is an introductory course for high school students directed by faculty and extension educators. Topics include human nutrition and food; human development and family sciences; and textiles, design, merchandising and textiles.

***Proposed Prerequisite:*** None.

***Proposed Activity Type:*** Lecture w/Lab

***Proposed Grading System:*** A-F (Letter grading)

***Proposed Term:*** Spring 2020

***Rationale:*** FCSC 1009 is designed to expose Wyoming high school students to the discipline of Family and Consumer Sciences. It is similar in format to an existing course (ANSC 1009) delivered through the department of Animal Science. High school undergraduate students will engage in learning activities through a distance format (e.g., lectures) that is facilitated by FCS faculty at UW and extension educators across the state. This course will aid in educating and recruiting potential UW students.

**Action:** Approved

**FCSC**

**5220 THERAPEUTIC NUTRITION II, 4.0 hrs.**

***Proposed Course Description:*** Rationale for dietary modifications in pathological conditions; experience with learning and applying the nutrition care process to develop nutrition care plans for individuals with various medical conditions with discussion of case studies.

***Proposed Dual Listing:*** FCSC 4220 (already in the catalog)

***Proposed Prerequisite:*** MOLB 4100 or concurrent enrollment or graduate standing.

***Enforce in Banner?:*** Yes

***Proposed Term:*** Spring 2020

***Rationale:*** Our nutrition unit/faculty would like to extend this course to a 5000 level graduate course.

**Action:** Approved

**FCSC**

**5230 THERAPEUTIC NUTRITION COUNSELING, 2.0 hrs.**

***Proposed Course Description:*** Students will develop basic nutrition counseling and communication skills. Students will learn how to apply the concepts learned during lecture through interactive classroom experiences with peers and outside of the classroom experiences with a real client. The ultimate goal of this course is to help students integrate their nutrition knowledge and counseling skills in order to help facilitate nutrition-related behavior change among a diverse group of patient/client populations.

***Proposed Dual Listing:*** FCSC 4230 (already in the catalog)

***Proposed Prerequisite:*** FCSC 4210 and FCSC 4220 (or concurrent enrollment) OR Graduate Status and Permission of Instructor.

***Enforce in Banner?:*** Yes

***Proposed Term:*** Spring 2020

***Rationale:*** Our nutrition unit/faculty would like to extend this course to a 5000 level graduate course.

**Action:** Approved

**PLNT**

**4220 CROP YIELD PHYSIOLOGY, 3.0 hrs.**

***Proposed Course Description:*** Physiological processes underlying crop growth and development. The effect of crop management practices on physiology and yield will also be discussed.

***Proposed Prerequisite:*** AECL 1000; CHEM 1000.

***Enforce in Banner?:*** Yes

***Proposed Activity Type:*** Lecture w/Discussion

***Proposed Term:*** Spring 2020

***Rationale:*** The course has been taught for two cycles since 2016 but with a “Topics” designation. Enrollment was 8 students each in Spring 2016 and Spring 2019. The course provides content that supports well the B.S. degree program delivered by the Department of Plant Sciences. The majority of the DPS faculty acknowledge the contribution of this course to the student’s overall understanding of plant-science-related curriculum. The course will not necessarily be a required course for the current or future DPS-BS degree program but will be an important elective. The course is an 100% online offering and thus, fits well with the DPS goal of strengthening its distance course footprint across Wyoming and beyond.

**Action:** Approved

* ***College of Arts & Sciences***

**COJO/ENR**

**4700/5700 MEDIA, SCIENCE, AND SOCIETY, 3.0 hrs.**

***Proposed Course Description:*** This course discusses why scientific, health, and environmental issues are covered in particular ways in media. We will also examine how these messages impact people's attitudes, opinion, knowledge, and emotions about science, health, and the environment.

***Proposed Prerequisite:*** COJO 1000 or ENR 1200 or ENR 1500 or ENR 2000 for undergraduate class. Graduate standing for graduate class.

***Proposed Activity Type:*** Lecture

***Proposed Grading System:*** A-F (Letter grading)

***Proposed Term:*** Spring 2020

***Rationale:*** This course will be taught for at least five consecutive years each spring (spring 2018 through spring 2022) as part of a grant to provide science communication/journalism instruction. The course is a component of the $20 million Track-1 EPSCoR project. The instructor, Dr. Kristen Landreville, is currently teaching the course as part of the COJO 5230 (Special Topics) section. COJO would like to designate the course as its own course number because the course will be taught for many upcoming spring semesters. The course has been taught at 45 undergraduate students. Dr. Kristen Landreville is the primary instructor for the course now. However, COJO has another faculty member, Dr. Kaatie Cooper, who is a qualified expert in science communication that can also teach the course, if needed. There is room in both Dr. Landreville's and Dr. Cooper's course loads to teach this course and the COJO Department Head, Dr. Cindy Price Schultz has been supportive and committed to keeping Media, Science, & Society in the spring curriculum for all of the years that the grant is in effect. Again, once the grant is complete, there is room in both Dr. Cooper and Dr. Landreville's course loads to teach this course.

**Action:** Approved

**ENGL**

**4040 RHETORIC, MEDIA, & CULTURE, 3.0 hrs.**

***Proposed Course Description:*** This class will guide us through the ways in which popular culture shapes the way that we view ourselves and other, and gives us a vocabulary to describe this phenomenon, critique it, and even push back against it.

***Proposed Prerequisite:*** COM1 and COM2

***Enforce in Banner?:*** Yes

***Proposed USP:*** COM3 - approved

***Proposed Activity Type:*** Lecture

***Proposed Term:*** Spring 2020

***Rationale:*** English would like to develop a new COM3 course suitable for students in any major but focused on humanities-based themes rather than on science, technology or professional and technical writing, which is what most of our COM3 courses focus on for non-English majors. This course will examine popular culture (fiction film, television, video games, comic books, etc.) as a sort of public rhetoric using several rhetorical theorists who study the formation of individual and national identities. It will guide students through the ways in which popular culture shapes the way that we view ourselves and others, and offers a vocabulary to describe this phenomenon, critique it, and even push back against it. Completing this class will allow students to develop their awareness of rhetorical theory and see how patterns of media consumption reinforce and challenge existing societal hierarchies.

**Action:** Approved

**GEOL**

**1050 GOLD AND THE AMERICAN WEST, 3.0 hrs.**

***Proposed Course Description:*** The gold rushes in the western United States offer a window into geologic principles and processes resulting to the accumulation of gold, and the consequences of resource extraction on the prospective geologic record of the Anthropocene. This course provides an interdisciplinary approach to natural resources.

***Proposed Prerequisite:*** none

***Enforce in Banner?:*** n/a

***Proposed USP:*** PN

***Proposed Activity Type:*** Lecture w/Discussion

***Proposed Term:*** Spring 2020

***Rationale:*** This new USP course will focus on: introducing students to the fundamentals of geology; applying that knowledge to understand the geologic history and distribution of natural resources in the western U.S.; and connecting these concepts to impacts on human time scales. This interdiscliplinary course will achieve this by focusing on the gold rushes from the mid-1850's onward, which will serve as a portal for understanding principles of tectonics, geologic materials, and geochemistry to develop models of gold accumulation in the U.S. and elsewhere--thereby satisfying the PN requirements.

The purpose of this course is multi-fold. For one, this is an important step in curriculum development for the Geology & Geophysics department, which is aiming to expand the amount of 1000-level PN courses it offers in an attempt to reach a wider variety of students. Traditionally, the majority of majors in the G&G dept transfer into the major after such a 1000-level course. The second major reason is that the G&G department is aiming to create courses that are addressing "grand challenges" and "wicked problems" within the scope of the geosciences: this course offers a very real way of dealing with environmental conditions, emigration and immigration patterns, laws, impact on native peoples, and the prospective impact of these events on the Anthropocene epoch while covering fundamentals of geology. Third, this course offers an opportunity to engage lecturers/researchers/professors from across the university in aiding in the development and presentation of lecture and discussion material: this will be important for developing future cross-campus collaborations.

**Action:** Approved

**GEOL**

**1450 SOLVING PROBLEMS FOR A SUSTAINABLE FUTURE, 3.0 hrs.**

***Proposed Course Description:*** The purpose of this course is to introduce students to problem solving and basic analysis in the context of Earth’s environment. Content includes large scale environmental feedbacks, cycles, and processes. The primary goals of the course are to gain an understanding of human/environment interactions and develop problem solving strategies.

***Proposed Prerequisite:*** None

***Enforce in Banner?***: No

***Proposed USP:*** PN

***Proposed Term:*** Spring 2020

***Rationale:*** This course fills the need for introducing students to problem solving in the context of sustainability of the human population on Earth. Other courses on the environment in general exist, however this is different because it specifically intends to teach students problem solving strategies that will be useful throughout their career at UW. As an introductory course, it will be of interest to a broad range of students.

**Action:** Approved

**MUSC**

**4000 CAREERS IN MUSIC, 2.0 hrs.**

***Proposed Course Description:*** Expands the student's understanding of the range of careers in the professional music world. Covers the concepts of marketing, performance, teaching, recording, technology, venue management, and fundraising.

***Proposed Prerequisite:*** MUSC 1000 or 1003.

***Proposed Term:*** Spring 2020

***Rationale:*** Traditional music careers are becoming more and more difficult to find and make a living from. Careers in Music complements traditional musical training by expanding the student's understanding of the range of careers in the professional music world. Students will learn how music progresses from artistic creation to consumable product, and how professional musicians utilize skills in marketing, performance, teaching, recording, technology, venue management, and fundraising. Individual projects will develop professional materials, and guest speakers who have succeeded in building viable, unique careers for themselves will present information to help the modern musician not only compete in the marketplace, but to be a creative and dedicated professional.

**Action:** Approved

* ***College of Business***

**FIN**

**5710 RISK MANAGEMENT, 3.0 hrs.**

***Proposed Course Description:*** Analyzes the risk management and insurance problem in the business enterprise with emphasis on methodology for risk analysis; techniques for risk and loss control; and models for risk management decision-making.

***Proposed Prerequisite:*** Graduate standing.

***Proposed Dual Listing:*** FIN 4710 (already in the catalog)

***Proposed Term:*** Spring 2020

***Rationale:*** The curriculum committee at the department of Accounting and Finance determined that the practical nature of the course is a suitable fit for MS finance students.

**Action:** Approved

**FIN**

**5720 INSURANCE AND RETIREMENT PLANNING, 3.0 hrs.**

***Proposed Course Description:*** This class is designed to help graduate students understand various topics in retirement and insurance planning for individuals and families.

***Proposed Prerequisite:*** Graduate standing.

***Proposed Term:*** Spring 2020

***Rationale:*** This course will serve as a part of the Certified Financial Planner (CFP) program and MS finance degree. The existing CFP curriculum lacks the course that focuses in retirement and insurance planning, two of the most critical areas of financial planning. This course will focus on the knowledge and practical applications of the risk management and will be geared towards the CFP curriculum.

**Action:** Approved

* ***Haub School of ENR***

**ORTM**

**4900 OUTDOOR RECREATION AND TOURISM MANAGEMENT BUSINESS STRATEGIES, 3.0 hrs.**

***Proposed Course Description:*** Application of the successful delivery of hospitality, tourism, and outdoor recreation enterprises. Business activities covered include tourism-specific marketing, market-based research and analytics, regional challenges and opportunities, business plan components, financial risk analysis, and law and policy.

***Proposed Prerequisite:*** Senior standing, ORTM 3050.

***Enforce in Banner?:*** Yes

***Proposed Restriction:*** ORTM majors only

***Proposed Term:*** Spring 2020

***Rationale:*** ORTM 4900-4903 is the last suite of new courses that need approval for the ORTM degree. These courses are part of the Professional Semester requirement for all ORTM majors. These courses are taken together in a block format. Allowances have been made for faculty teaching loads. We will be graduating our first 12 seniors in the ORTM program in the spring of 2020. Approval of these courses is critical to the ORTM degree.

**Action:** Approved

**ORTM**

**4901 HUMAN DIMENSIONS OF OUTDOOR RECREATION AND TOURISM MANAGEMENT, 3.0 hrs.**

***Proposed Course Description:*** This course synthesizes social, environmental, and economic aspects of outdoor recreation and tourism by examining social science methods and research conducted within these spheres. This course will be an applied experience in learning how to answer the question “Why do recreationists and tourists do what they do?”

***Proposed Prerequisite:*** Senior standing, ORTM 3050.

***Enforce in Banner?:*** Yes

***Proposed Restriction:*** ORTM majors only

***Proposed Term:*** Spring 2020

***Rationale:*** ORTM 4900-4903 is the last suite of new courses that need approval for the ORTM degree. These courses are part of the Professional Semester requirement for all ORTM majors. These courses are taken together in a block format. Allowances have been made for faculty teaching loads. We will be graduating our first 12 seniors in the ORTM program in the spring of 2020. Approval of these courses is critical to the ORTM degree.

**Action:** Approved

**ORTM**

**4902 RECREATION VENUE OPERATIONS, 3.0 hrs.**

***Proposed Course Description:*** Applies best practices of resource and facility management in conjunction with recreation use and infrastructure development and maintenance. Students will examine the importance and challenges of matching user expectations with quality amenities of both private business and resource management agencies. Students will evaluate real-world problems and opportunities.

***Proposed Prerequisite:*** Senior standing, ORTM 3050.

***Enforce in Banner?:*** Yes

***Proposed Restriction:*** ORTM majors only

***Proposed Term:*** Spring 2020

***Rationale:*** ORTM 4900-4903 is the last suite of new courses that need approval for the ORTM degree. These courses are part of the Professional Semester requirement for all ORTM majors. These courses are taken together in a block format. Allowances have been made for faculty teaching loads. We will be graduating our first 12 seniors in the ORTM program in the spring of 2020. Approval of these courses is critical to the ORTM degree.

**Action:** Approved

**ORTM**

**4903 CAPSTONE, 3.0 hrs.**

***Proposed Course Description:*** Integrates theory and practice to create solutions for real-world problems and opportunities in outdoor recreation and tourism. Industry or government sponsors will mentor projects; students will research and execute a project and share a product with direct value to the sponsor and community.

***Proposed Prerequisite:*** Senior standing, ORTM 3050.

***Enforce in Banner?:*** Yes

***Proposed Restriction:*** ORTM majors only

***Proposed Term:*** Spring 2020

***Rationale:*** ORTM 4900-4903 is the last suite of new courses that need approval for the ORTM degree. These courses are part of the Professional Semester requirement for all ORTM majors. These courses are taken together in a block format. Allowances have been made for faculty teaching loads. We will be graduating our first 12 seniors in the ORTM program in the spring of 2020. Approval of these courses is critical to the ORTM degree.

**Action:** Approved

* ***Other***

**GIST**

**2150 INTRODUCTION TO PROGRAMMING IN GEOSPATIAL INFORMATION SCIENCE AND TECHNOLOGY, 3.0 hrs.**

***Proposed Course Description:*** Introductory geospatial programming course covering the basic concepts and features of the Python scripting language, including data structures and functions, and the development of basic GIS scripting skills. Students implement spatial data collection, processing, and presentation methods for automating geospatial analyses.

***Proposed Prerequisite:*** none

***Proposed Term:*** Spring 2020

***Rationale:*** This new course will contribute vital geospatial programming skills for undergraduates studying Geospatial Information Science and Technology, and it will contribute to a proposed new Bachelor of Science degree if approved. Even without the degree, many UW undergraduate students in a variety of disciplines will benefit from learning how to write programs to automate GIS analyses.

**Action:** Approved

**GIST**

**2160 SURVEY OF REMOTE SENSING APPLICATIONS, 3.0 hrs.**

***Proposed Course Description:*** This course introduces remote sensing by surveying applications across disciplines. It includes a brief overview of fundamentals followed by exploration of types of remote sensing including aerial photography, multispectral and hyperspectral satellite remote sensing, active remote sensing, and thermal remote sensing. The course also introduces remote sensing applications for global change.

***Proposed Prerequisite:*** USP Q

***Enforce in Banner?:*** Yes

***Proposed Restrictions:*** Sophomore and Juniors only.

***Proposed USP:*** PN

***Proposed Term:*** Spring 2020

***Rationale:*** After the recent dissolution of the Geography Department, WyGISC will be offering academic courses in Geospatial Information Science and Technology (GIST). Courses currently offered by the Departments of Geography and Botany will contribute to this program. The proposed changes are contributing to this reorganization. We propose to offer the existing BOT/GEOG 3150 at the 2000-level to attract more sophomore and junior students and to better facilitate articulation with community colleges. Students introduced to these concepts earlier in their student careers will encourage them to continue into new and modified upper division remote sensing courses. The USP15 PN designation will make this course appealing to non-science majors.

**Action:** Approved

**GIST**

**2200 SPATIAL DATA VISUALIZATION, 3.0 hrs.**

***Proposed Course Description:*** Covers fundamental principles, concepts, and applications of spatial data visualization. Students will learn to find, understand, and act on spatial patterns, associations and trends, and to use and critique powerful graphical representations of spatial data including 3D maps, web maps, interactive graphics, and animations.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Lecture w/Lab

***Proposed Term:*** Spring 2020

***Rationale:*** This course will contribute to an expanded GIST curriculum being offered by WyGISC. Spatial data visualization is a core area of geospatial sciences. Students learn how to present and analyze geospatial information graphically, and to critique representations of spatial data.

**Action:** Approved

**GIST**

**3111 INTRODUCTION TO REMOTE SENSING, 3.0 hrs.**

***Proposed Course Description:*** This is a combined lecture and computer lab course designed to present the physical principles of remote sensing, the application of airborne and satellite imagery to the study of the earth’s surface with an emphasis on vegetation, and the hands-on application or remote sensing principles using digital image processing.

***Proposed Prerequisite:*** USP Q

***Enforce in Banner?***: Yes

***Proposed Activity Type:*** Lecture w/Lab

***Equivalent to BOT/GEOG 4111?***: Yes

***Proposed Term:*** Spring 2020

***Rationale:*** This introductory remote sensing course is being renamed, renumbered, and revised to fit logically into the developing GIST curriculum. Previously, this course was a Botany course that was cross listed with Geography and dual-listed at the 4000- and 5000-levels. The new course will be decoupled from the graduate course, which will be taught primarily online and CARFed separately. Course content will be modified to fit a lower number of credit hours and to adjust it from the 4000- to the 3000-level, but the underlying learning objectives and philosophy of the course will remain the same. The Botany Department has agreed to this change.

**Action:** Approved

**GIST**

**4130/5130 APPLIED REMOTE SENSING FOR AGRICULTURAL MANAGEMENT, 3.0 hrs.**

***Proposed Course Description:*** Covers remote sensing concepts and applications related to croplands, rangelands, forests, and water. Students learn techniques for monitoring plant growth and vigor, monitoring rangelands, distinguishing invasive species, categorizing forest fires, and mapping water bodies. Students integrate remotely sensed data with other geospatial data.

***Proposed Prerequisite:*** QA/Q course and 9 credit hours in student’s major field and junior/senior standing.

***Enforce in Banner?***: Yes

***Proposed Activity Type:*** Lecture w/Lab

***Proposed Cross Listing:*** AECL/RNEW 4130.

***Equivalent to BOT 4130/5130?***: Yes

***Proposed Term:*** Spring 2020

***Rationale:*** After the recent reorganization of the Geography Department, the Wyoming GIS Center (WyGIS) will administer geospatial courses and programs at UW. Geospatial courses (GIS, Remote Sensing) offered by the Botany and Geography departments will be listed under the GIST prefix. As part of this reorganization, WyGISC is streamlining existing courses and will offer them under the new GIST prefix. We propose to offer the existing BOT/RNEW 5130 as GIST 5130, and BOT/AECL/RNEW 4130 as GIST/AECL/RNEW 4130.

**Action:** Approved

**GIST**

**4211/5211 ADVANCED REMOTE SENSING, 3.0 hrs.**

***Proposed Course Description:*** On-campus and online course including lecture and digital image processing lab. Explores advanced remote sensing techniques including high spatial and spectral resolution data analysis, active remote sensing (radar and lidar), and advanced image classification. Other advanced topics may be discusses as needed.

***Proposed Prerequisite:*** 4211: GIST 3111 or GIST 4130; 5211: GIST 5111 or GIST 5130.

***Enforce in Banner?***: Yes

***Proposed Activity Type:*** Lecture w/Lab

***Equivalent to BOT/GEOG 4211/5211?***: Yes

***Proposed Term:*** Spring 2020

***Rationale:*** This existing Botany course (BOT 4211/5211) is being moved into the new GIST curriculum (with permission) and the number of credit hours is being reduced from 4 to 3 to facilitate online delivery. The course may be delivered both on-campus and online. The course description will be changed slightly to reflect the change in delivery mode. GIST 4211/5211 provides core instruction in remote sensing and is a follow-up to GIST 3111 and GIST 5111, both of which are being altered to fit the new curriculum.

**Action:** Approved

**GIST**

**4410 UAS SENSORS AND PLATFORMS, 1.0 hrs.**

***Proposed Course Description:*** This 1-credit online course provides a detailed overview of the types of drones used for modern remote sensing and of the sensors that can be used with these different drone platforms to collect data, including RGB and multi-spectral cameras, thermal sensors, and lidar.

***Proposed Prerequisite:*** none

***Proposed Dual Listing:*** GIST 5410 (already exists in catalog)

***Proposed Term:*** Spring 2020

***Rationale:*** UAS (drone) remote sensing is an important growing field in geospatial science, and providing students with training at both the undergraduate and graduate levels will be valuable to UW students. We "CARFed" this course at the graduate level last spring, but realize that opening it to undergrads is important. The course is online (asynchronous), and all students will be presented with the same material, but undergraduates will be assessed based on a different set of assignments appropriate for a 4000-level course (see syllabus).

**Action:** Approved

**GIST**

**4420 UAS MISSION PLANNING, 1.0 hrs.**

***Proposed Course Description:*** This 1-credit online course provides a detailed overview of mission planning for UAS (drone) data collection. Students learn to evaluate mission requirements for a variety of UAS applications, to choose appropriate hardware to accomplish these requirements, and to use mission planning software to translate requirements into flight plans and data collection strategies.

***Proposed Prerequisite:*** none

***Proposed Dual Listing:*** GIST 5420 (already exists in catalog)

***Proposed Term:*** Fall 2020

***Rationale:*** This proposal is to add a 4000-level dual list the existing GIST 5420 to facilitate UAS education for UW undergraduates. Undergraduates will be presented with the same material as graduate students, but they will be assessed using different assignments appropriate for the 4000-level. This course addresses a need at UW to provide undergraduate and graduate instruction in UAS (drone) remote sensing. It is part of an expanded geospatial curriculum and a core course in a proposed graduate certificate in UAS remote sensing. Drones have become a widely-used tool for collecting aerial data in industry and research, and it is critical that UW graduate students be given an opportunity to learn how to use this technology. This 1-credit course specifically addresses flight planning for drone missions.

**Action:** Approved

**GIST**

**4430 UAS REGULATIONS AND SAFETY, 1.0 hrs.**

***Proposed Course Description:*** This 1-credit online course taught over 8 weeks provides students with a detailed overview of federal, state, and local regulations pertaining to UAS flights and data collection. Students also learn about how to operate drones safely in both personal and professional applications. Course content helps prepare students for FAA remote pilot certification.

***Proposed Prerequisite:*** none

***Proposed Dual Listing:*** GIST 5430 (already exists in catalog)

***Proposed Term:*** Fall 2020

***Rationale:*** This proposal is to dual list the existing GIST 5430 as GIST 4430/5430 to facilitate undergraduate education in UAS remote sensing. This 1-credit course addresses a need at UW to provide instruction in UAS (drone) remote sensing. It is part of an expanded geospatial curriculum and a core course in a proposed graduate certificate in UAS remote sensing. Drones have become a widely used tool for collecting aerial data in industry and research, and it is critical that UW undergraduate and graduate students be given an opportunity to learn how to use this technology. Specifically, this course covers regulations and safety issues relevant to UAS operation and helps prepare students to pass the FAA certification exam for drone pilots. Undergraduates will be presented with the same course material as graduate students, but will be assessed using different assignments appropriate for the 4000-level.

**Action:** Approved

**GIST**

**4440 UAS GROUND SCHOOL AND OPERATIONS, 2.0 hrs.**

***Proposed Course Description:*** This 2-credit field course provides students with the practical experience to operate UAS (drones) safely, legally, and effectively for collecting data to be used in a variety of applications. Students learn about pertinent safety and regulations, and then spend much of the course time flying drones in the field and collecting data.

***Proposed Prerequisite:*** none

***Proposed Dual Listing:*** GIST 5440 (already exists in catalog)

***Proposed Term:*** Fall 2020

***Rationale:*** This proposal is to add a 4000-level dual listing to the existing GIST 5440 course to facilitate undergraduate education in UAS remote sensing. Undergraduates will be presented with the same course material as graduate students, but they will be assessed using assignment appropriate for the 4000-level. This 2-credit course addresses a need at UW to provide instruction in UAS (drone) remote sensing. It is part of an expanded geospatial curriculum and a core course in a proposed graduate certificate in UAS remote sensing. Drones have become a widely used tool for collecting aerial data in industry and research, and it is critical that UW students and professionals in the region be given an opportunity to learn how to use this technology. Specifically, this on-site, workshop-style course teaches students the skills necessary to fly drones safely and effectively to collect data for a variety of applications.

**Action:** Approved

**GIST**

**4450/5450 UAS PHOTOGRAMMETRYAND IMAGERY PROCESS, 3.0 hrs.**

***Proposed Course Description:*** This 3-credit online course provides overviews of the photogrammetric principles related to imagery data acquired by unmanned aerial vehicles or drones, and the image processing techniques used for extracting information from the drone images. Students will gain experience in processing drone imagery collected with RGB cameras and multi-spectral sensors.

***Proposed Prerequisite:*** 4450: Junior/Senior standing or approval from the instructor; 5450: graduate standing or approval from the instructor.

***Enforce in Banner?***: Yes

***Proposed Activity Type:*** Lecture w/Lab

***Proposed Term:*** Fall 2020

***Rationale:*** We propose to add a new course in processing imagery acquired by Unmanned Aerial Vehicles (UAS or drones). Drones are an exciting new tool for many disciplines, and this course will provide both undergraduate and graduate students with a rigorous introduction to photogrammetry (the science of extracting information from images) that goes beyond pushing buttons in software. It is anticipated that students with skill in collecting and analyzing data from sensors carried on drones will be very attractive in the job market.

**Action:** Approved

**GIST**

**4790/5790 SPECIAL TOPICS IN GEOSPATIAL INFORMATION SCIENCE AND TECHNOLOGY, 3.0 hrs.**

***Proposed Course Description:*** Advanced and specialized topics in GIS&T are addressed through guided student discussions of current literature and possible hands-on analyses.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Seminar

***Proposed Term:*** Spring 2020

***Rationale:*** This course will allow faculty to teach seminar-style classes on a variety of relevant topics in Geospatial Information Science and Technology (GIS&T) for both undergraduates and graduates. It provides students and faculty the opportunity to explore topics that become relevant but that are not addressed in depth in traditional courses.

**Action:** Approved

**GIST**

**4870 INTERNSHIP IN GEOSPATIAL INFORMATION SCIENCE AND TECHNOLOGY,   
1.0-12.0 hrs. (Max. 12)**

***Proposed Course Description:*** Provided undergraduates with the opportunity to receive credit for practical experience in geospatial information science and technology. Internship opportunities must be approved by faculty and work supervisors.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Internship

***Proposed Grading System:*** S/U

***Proposed Term:*** Spring 2020

***Rationale:*** This course provides undergraduate students with an opportunity to earn credit for participating in professional internship opportunities in GIST. If a proposed GIST undergraduate degree is approved, internships will be a requirement, but even without approval, this will give students the opportunity to earn credit for practical experiences in this growing multidisciplinary field. Internships will be vetted and supervised by GIST faculty.

**Action:** Approved

**GIST**

**4950 UNDERGRADUATE RESEARCH IN GEOSPATIAL INFORMATION SCIENCE AND TECHNOLOGY, 1.0-6.0 hrs. (Max. 6)**

***Proposed Course Description:*** Undergraduate research in Geospatial Information Science and Technology (GIST) under the mentorship of UW faculty. Students are encouraged to present their research at professional meetings and to publish their work. GIST is multidisciplinary, so research problems span a wide range of topics.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Research

***Proposed Term:*** Spring 2020

***Rationale:*** This course will provide undergraduate students the opportunity to participate in research in Geospatial Information Science and Technology and to receive credit for their work. Students will work with faculty on campus in this important multidisciplinary research area.

**Action:** Approved

**GIST**

**5002 GEOSPATIAL FORUM, 1.0 hr.**

***Proposed Course Description:*** Students attend a geospatial sciences speaker series and contribute by presenting their proposed or completed research to faculty and other students in a professional manner analogous to presenting scientific research at professional meetings.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Seminar

***Proposed Grading System:*** S/U

***Proposed Term:*** Spring 2020

***Rationale:*** This proposed course provides a means for graduate students earn credit for participating in a geospatial seminar series and presenting research proposals and reports. Students from a range of disciplines will work with WyGISC faculty to complete research projects. During this forum, they will present their research to other students and faculty. If proposed graduate credentials in GIST are approved, this course will be a requirement, and graduate students will present their thesis research.

**Action:** Approved

**GIST**

**5111 INTRODUCTION TO REMOTE SENSING, 3.0 hrs.**

***Proposed Course Description:*** Combined online lecture and laboratory course introduces students to fundamental principles and techniques of remote sensing and the application of digital satellite and aerial imagery to the study of the earth’s surface. Includes hands-on application of digital imaging processing techniques discussed in lecture.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Lecture w/Lab

***Equivalent to BOT/GEOG 5111?***: Yes

***Proposed Term:*** Fall 2020

***Rationale:*** This introductory remote sensing course is being renamed and revised to fit logically into the developing graduate-level online GIST curriculum. Previously, this course was a Botany course that was cross listed with Geography and dual-listed at the 4000- and 5000-levels. The new online course will be decouples from the undergraduate course, which will be taught primarily on campus. Course content will be modified to fit a lower number of credit hours (3 vs. 4), but the underlying learning objectives and philosophy of the course will remain the same. The Botany Department has agreed to this change.

**Action:** Approved

**GIST**

**5120 INTEGRATION OF RS AND GIS DATA, 3.0 hrs.**

***Proposed Course Description:*** Many geospatial analyses involve combining remotely sensed (RS) data and products with other geospatial data stored in GIS. This 3-credit online course will overview the topics pertaining to the integration of RS data in raster format with GIS data stored in vector format.

***Proposed Prerequisite:*** Graduate standing.

***Enforce in Banner?***: Yes

***Proposed Activity Type:*** Lecture

***Proposed Term:*** Spring 2020

***Rationale:*** This course will contribute to a new graduate curriculum in geospatial sciences being developed at WyGISC and will augment existing UW courses by teaching students about issues specific to linking two important geospatial fields, remote sensing and GIS, which are often seen as being separate. Many UW graduate students use remote sensing and GIS in their research, and this gives them the opportunity to learn to effectively combine them.

**Action:** Approved

**GIST**

**5200 GEOGRAPHIC VISUALIZATION, 3.0 hrs.**

***Proposed Course Description:*** This online lecture and lab course emphasizes advanced theory and hands-on practice for creating applying interactive, dynamic, and multidimensional graphical representations of geographic data. Students will be introduced to web programming to allow them to develop mobile and online visualization tools.

***Proposed Prerequisite:*** none

***Proposed Activity Type:*** Lecture w/Lab

***Proposed Term:*** Spring 2020

***Rationale:*** This online course will add instruction in a core area of geospatial information science and will contribute to the new graduate curricula being offered through the Wyoming Geographic Information Science Center. Geographic visualization teaches students to create, apply and critique graphical representations of geospatial data and to use web programming to create visualization tools.

**Action:** Approved