MISSISSIPPI STATE UNIVERSITY™
COLLEGE OF FOREST RESOURCES

2022–2023

UNDERGRADUATE HANDBOOK

PREFACE

This handbook has been prepared for undergraduate students and advisors in the College of Forest Resources (CFR) at Mississippi State University (MSU) and contains information that will assist students in their progression towards the Bachelor of Science (B.S.) degree. This information is provided to answer questions which may arise during a student's academic endeavors.

The ultimate responsibility for meeting graduation requirements and decisions on course selection resides with the student. Specifically, responsibilities of the student are to:

- be aware of and understand degree requirements of his or her chosen major and concentration;
- be aware of and understand the MSU, CFR, and departmental policies, procedures, and academic calendar and meet all relevant deadlines;
- meet all requirements of the degree program being pursued; and
- maintain regular contact with his or her faculty advisor. The responsibility of the faculty advisor is to provide effective counsel to the student on academic matters regarding curriculum and career decisions.

This handbook is intended to supplement the MSU Bulletin. This handbook may include changes or requirements not found in the MSU Bulletin. Each student should access the MSU Bulletin online and the CFR Undergraduate Handbook that contains the curriculum year he or she is following. Students are expected to bring this handbook to academic appointments.

Questions should be addressed to Students Services Coordinator, Office of Student Services. 129 Thompson Hall, Mississippi State, MS 39762, 662.325.9376

This handbook presents information that, at the time of preparation, most accurately described courses, curricula, degrees, policies, procedures, regulations and requirements of the college of forest resources.

No contractual relationships can be established between students, the college of forest resources,and the university upon the information contained herein. The CFR reserves the right to delete,substitute, change, or supplement any statement in this handbook without prior notice.

HANDBOOK REVISED 1/2023

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INTRODUCTION

The College of Forest Resources is one of eleven colleges and schools at MSU. The CFR was founded in 1954 as the School of Forestry to provide teaching, research, and service opportunities about forests and associated renewable natural resources for the state, region, and nation. Since then, the CFR has earned a national and an international reputation as a center for science and education programs in natural resources management and use. The CFR has unique responsibilities to fulfill the goals of Mississippi State University through programs focused on Mississippi's most important renewable natural resources: forests and their products, fisheries, wildlife, and water. In doing so, the CFR's mission is to promote the professional and intellectual development of its students; expand through research the fundamental knowledge upon which the natural resource disciplines are based; and assist with development and utilization of the forest, wildlife, fisheries, and water resources of the state and nation through applied education, research, service, and technology transfer activities. The vision of the CFR is to be recognized as preeminent in teaching, service, and outreach in forest products, forestry, wildlife and fisheries in the United States.

The CFR is housed in Thompson Hall and the Forest Resources Complex, both state-of-the-art facilities, surpassing the facilities of most natural resource education programs in the nation. The specialized teaching and research facilities available to the CFR's education program include three computer laboratories with over 60 PC workstations. The Measurements and Spatial Technologies Laboratory (MSTL) is equipped with workstations and servers that provide software functionality for remote sensing/ image analysis and geographic information systems (GIS). CFR resources and facilities also include the 8,200 acre John W. Starr Memorial Forest, located nine miles from campus; the 1,200-acre Sharp Forest in northeastern Mississippi; captive animal holding facilities; the Franklin Furniture Building; and the Forest and Wildlife Research Center. Research and instruction activities also use the Noxubee National Wildlife Refuge and the Tombigbee National Forest, both located adjacent to the John W. Starr Memorial Forest.

MOST ACADEMIC FORMS FOR STUDENTS ARE AVAILABLE ON THE WEB AT:
https://www.cfr.msstate.edu/students/current. Jobs, internships, and summer employment opportunities are posted on the CFR Jobs Database on the web at www.cfr.msstate.edu/jobs. Scholarship opportunities, CFR student organization notices, and other academic related information are posted on the bulletin boards in the Student Lounge and are forwarded electronically to students' MSU e-mail address. A microwave and vending machines are available to students in the Student Lounge.

SECTION I: GENERAL INFORMATION AND COLLEGE-WIDE POLICIES

ACADEMIC ACHIEVEMENT

Full time students completing at least twelve hours (with no incomplete grades nor grades lower than a C) in a regular semester who earned a GPA of 3.80 or higher are President's Scholars. Dean's Scholars are students who earned a GPA of 3.50 to 3.79.

Students who have completed 60 hours of their degree at MSU and earned high GPAs on both MSU and cumulative coursework will receive the following recognition at graduation: Summa Cum Laude: GPA 3.80 or higher; Magna Cum Laude: GPA of 3.60 to 3.79; or Cum Laude: GPA of 3.40 to 3.59.

ACADEMIC AMNESTY

The Academic Amnesty program is designed to provide students with an opportunity to have past grades of "D" and/or "F" eliminated from the computation of his or her grade point average at MSU. Courses included in Academic Amnesty are not applied toward graduation. To be eligible for this program, students must have a total of five years' continuous nonattendance in any post-secondary institution of higher education. Students may request Academic Amnesty at any time after admission or re-admission to MSU until the end of the semester preceding that in which the student graduates. The new grade point average will be noted on the transcript upon successful completion of at least 12 hours at MSU. This is an MSU policy and may not be honored at other institutions of higher learning.

ACADEMIC FRESH-START

Students who have not been enrolled in a post-secondary institution of higher education for at least 24 consecutive months may petition for Academic Fresh-Start. All credits will be eliminated from the student's grade point average and may not be used toward graduation at MSU. The student's transcript will reflect the course work, but will contain a notation declaring the course work void for the purposes of academic standing and graduation. The notation will be on the transcript upon successful completion of 12 hours at MSU. This MSU policy may not be honored at other colleges and universities.

ACADEMIC FORGIVENESS

Students are permitted to retake up to two courses, not to exceed 8 hours, in which he or she made a "B", "C", "D" or "F", with the original grade remaining on the transcript but not counted in the student's GPA. The second grade will be computed in the GPA, regardless of which of the two grades is higher. A student may only retake a course once under this policy and it must be taken at MSU. Students may not retake a course in which an "F" was received as a sanction for academic misconduct.

To invoke this policy, the student must submit an electronic retake request to the Registrar by the deadline on the last day to add a course. The electronic form can be requested when the student is in the My Banner system. The CFR Student Services Office will be notified electronically that retake requests have been registered and will have the opportunity to review the requests.

Any retake requests not processed by the home department within five business days of the last day for submitting requests will be implemented automatically.

ACADEMIC STANDING

Academic Probation

A student whose cumulative MSU GPA is less than 2.00 at the end of any term will enter the next term on academic probation and will remain on probation until the GPA reaches 2.00 or higher. After having been notified of probationary status, a student must schedule an appointment with his/her academic advisor, Undergraduate Coordinator or the Student Services Coordinator to devise a plan to improve his/her academic performance.

Academic Suspension

Students with a semester GPA of 2.0 or less who fail to meet the following MSU cumulative GPA requirements will be suspended.

MSU GPA Hours	MSU Cumulative GPA
67+	2.0
37-66	1.8
19-36	1.6
0-18	not subject to suspension

No student will be suspended for failing to achieve the required GPA without first having had at least one semester of probationary notice (not necessarily the immediately preceding semester).

Academic suspension shall be for at least one regular (fall or spring) semester. For students suspended at the end of a spring semester, the suspension precludes enrollment in any summer school session as well as the following fall semester. The student may be readmitted on academic probation following the expiration of the first suspension. A student who attends another university during a suspension from MSU must maintain a 2.0 GPA (calculated by MSU standards) on any transfer work. Students who fail to meet these criteria may be readmitted only on the recommendation of their college and with the approval of the Provost. A student may continue in school during the second term of summer session, irrespective of his or her record during the first term.

Typically, once placed on academic suspension, a student must sit out of the university for a semester. However, as an alternative, the Office of the Provost and The Center for Academic Excellence (CAE) have designed a program that allows students on academic suspension to stay in school and improve their academic standing and progress. Housed in CAE, the Bulldog Rebound Program provides techniques that prepare the student to be academically successful in the future.

If a student's academic advisor and the Associate Dean of CFR (or Student Services Coordinator) agree on this option, a

student will be allowed to enroll that semester, rather than sitting out. However, should the student be denied early readmission, the program is still an option for the student upon his return after sitting out his required semester. For additional information visit https:www.lssp.msstate.edu.

Academic Dismissal

A student who has one academic suspension and does not earn a current semester GPA of 2.00 or higher and has less than the required MSU cumulative GPA listed under the Academic Suspension rules will be dismissed. A student who has been dismissed is not automatically or routinely readmitted. A student may submit a written petition for readmission to their college after one calendar year's absence. The College may, upon recommendation from the student's advisor and department head, approve readmission. Application for readmission should be filed with the student's department head no later than 15 days prior to the first day of classes.

ACCESS TO THOMPSON HALL

Undergraduate students currently enrolled in CFR academic programs may use their MSU ID card for access to Thompson Hall and Thompson Hall computer labs. Access is granted after the tenth day of the semester by the CFR Student Services Coordinator. Students should email the CFR Student Services Coordinator if their IDs are not allowing building access.

ADMISSION REQUIREMENTS

Freshmen who meet MSU admission requirements will be admitted into the CFR.

Students transferring from another accredited senior or community college of higher learning who meet MSU admission requirements and wish to pursue a major in the College of Forest Resources and have a 2.00 or better GPA will be admitted into a major and a concentration within the College.

ADVISING

A faculty advisor will be assigned to each student after the tenth day of the semester. The faculty member remains as the student's advisor throughout his or her academic career at MSU unless: (1) the student changes major/concentration; or (2) a change in advisee or advisor is requested. Students should check mystate to find their CFR advisor's name. Faculty offices and phone numbers are listed in the appendix of this document.

The advisor will, upon request by the student:

- Guide progress in the major/concentration chosen;
- Offer specific course suggestions for a given semester (see schedule preparation/registration);
- Make referrals to appropriate CFR and university resources for personal counseling, career guidance, or other assistance;
- Provide advice on career objectives and opportunities.

ADVISOR CHANGE

Changing faculty advisors requires the signature of the student, the prospective advisor, and the Coordinator of the CFR Office of Student Services. Permission to change to another advisor is granted on an individual basis depending on circumstances explained by the student. Students can acquire a Request for Advisor Change form on the CFR web site.

Students may be reassigned for reasons such as advisee ratio; faculty sabbaticals, faculty turnover, etc. In these cases, students will be notified via e-mail regarding the new advisor assignment.

APPLICATION FOR DEGREE

The student must apply for graduation at the beginning of the semester in which he or she expects to graduate through their MSU Student Account following the link to Application for Degree. The deadline is listed in the Academic Calendar. Students must have a graduation audit completed in the CFR Office of Student Services 2 semesters before graduation (see Graduation Audit).

CFR students earn a Bachelor of Science degree with one of the following majors: Forestry; Natural Resource and Environmental Conservation; Sustainable Bioproducts or Wildlife, Fisheries and Aquaculture. Students should check to ensure his or her concentration is correct and should indicate a minor if pursuing one.

CALENDARS

Students can access calendars on the Mississippi State University web site: www.msstate.edu. The Academic Calendar contains important deadlines that students must follow such as deadlines to drop or add classes, to withdraw from classes, to apply for graduation, etc. The Examination Schedule, MSU Calendar of Events, and other calendars are located at the same web site.

CAREER CENTER

Job search assistance and career counseling are provided for students and alumni through the Career Center. Assistance with interviewing, résumé development, career planning, job search seminars, and salary information is available.

CFR students should register with the MSU Career Center as soon as possible upon admittance to a degree program in the College of Forest Resources. Prospective employers continually review résumés on the MSU Career Center web site: https://www.career.msstate.edu. The Career Center is located at 300 Montgomery Hall, 662.325.3344.

In addition, students are encouraged to review the CFR Jobs Database on the web site: www.cfr.msstate.edu. Students should check their e-mail accounts for job announcements as well.

CHANGE OF MAJOR/CONCENTRATION

A student changing from one college to another must complete all arrangements for the transfer prior to beginning the new course of study. Before making the change, the student must initiate a

Change of Major form in the new major's college. Transfer to a new major is subject to approval by the new college. Change of Majors are signed and processed by the CFR Office of Student Services in 129 Thompson Hall.

Students changing majors must meet the requirements listed in this handbook and in the MSU Bulletin that is current at the time they make the change.

To initiate a change of major or concentration within the CFR, a student must complete a Change of Major form and meet admission requirements for the chosen major to which he or she wishes to change. These forms are available in the Office of Student Services, Thompson Hall 129.

CLASS ATTENDANCE

A student assumes responsibility to attend class and complete assignments when he/she enrolls in a course. When absence from class is essential, the student is responsible to make arrangements satisfactory to the instructor with regard to work missed. These arrangements should be made prior to the absence when possible. Excused absences as identified by the university include: participation in an authorized university activity; death or major illness in the immediate family; illness of a dependent; participation in legal procedures; religious day; illness that is too severe or contagious to attend class; required military duties; and mandatory admission interviews for professional/graduate school. It is the student's responsibility to secure documentation. Medical documentation must contain the date and time the student had treatment. Based upon this, the instructor will decide whether makeup work will be allowed.

Absences become part of the student's file. Instructors may report absences to the Division of Student Affairs at any time they feel it appropriate to do so and are expected to report students with continued consecutive absences. Although instructors are asked to record absences, some place more emphasis on the number of absences permitted than others. Students should strive to attend all classes.

CLASSIFICATION OF STUDENTS

Mississippi State University classifies students according to the total hours passed as follows:

MSU student classification according to total hours passed:	
Seniors	90 + semester hours
Juniors	60–89 semester hours
Sophomores	30–59 semester hours
Freshmen	29 or less semester hours

All majors in the CFR have been designed for completion in four years, or eight semesters (plus one Summer Field Program for Forestry majors). However, students must be aware that failure to schedule and complete full loads (i.e., 15-16 credit hours or more per semester) will result in extra semesters required to complete degree requirements. For example, a student scheduling 14 credit hours each semester will require 9 semesters; 12 hours will require 10 semesters.

Most CFR classes are offered once a year or every other year. Students should keep this in mind when planning their programs. Failure to enroll in a course, or a prerequisite/corequisite, the semester it is offered can delay graduation by a year.

COLLEGE LEVEL EXAM PROGRAM (CLEP)

CLEP credit can be applied per MSU policy. A list of MSU courses accepted by CLEP credit can be found in the MSU Bulletin. The number of CLEP hours that can be applied to a degree is limited to one quarter of the total number of hours required for a degree.

COMPUTER LABORATORIES

The CFR maintains three computer labs for use by CFR students. They are located in rooms 308 Thompson Hall Annex, 137 Thompson Hall, and in the Franklin Center Room 110. Maintenance costs prohibit use of the labs by students from other majors, unless approved by administration for special circumstances.

A CFR lab account is required to access the computer labs. Your lab account username will be set to your Net ID. A password change is forced upon first login. Passwords must be 8 characters or longer. Instructional material on changing passwords is available at www.its.cfr.msstate.edu/faq.asp. If you have problems logging in, please contact CFR IT Support at the CFR help desk: e-mail - helpdesk@cfr.msstate.edu, phone 325.2140 or stop by Room 139 Thompson Hall.

The a308 and 137 Thompson Hall computer labs are open except for scheduled class usage times. The Franklin Center computer lab is open Monday-Friday, 8:00 am to 5:00 p.m.

Students experiencing problems during the work day should contact their instructor who will determine if the problem is usage-related or computer-related. If the problem is computer-related, the student or instructor should contact CFR IT Support at the CFR help desk: e-mail - helpdesk@cfr.msstate.edu, phone 325.2140 or stop by Room 139 Thompson Hall.

Students experiencing problems in a CFR lab outside of the workday should send an e-mail to the CFR help desk: helpdesk@cfr.msstate.edu. It is important that the student also contact the class instructor the next workday to make sure the problem is not usage-related. The e-mail message to the CFR help desk should contain the student's first and last name, Net ID, course and instructor's name, software package being used when the problem occurred, a thorough explanation of the problem, and which lab, computer and/or printer was being used.

Other regulations that students must observe in the CFR computer laboratories include:

- Absolutely no software shall be installed on the lab computers without prior approval by the IT Staff. This includes software

such as Yahoo Messenger, AOL instant messenger, games and shareware programs. Also, do not download music, pictures or movies to CFR computers. Sharing copyrighted music is illegal, and punishable under the Federal Digital Millennium Copyright Act. When you illegally share music it places you, as an individual as well as the University, in a seriously liable situation. Offenders will be reported to the proper authorities.

- Do not share your CFR lab account username and password. You are accountable for the security of your account.
- Students should log out of the computer before leaving the lab.
- Students must bring their own paper for use in the laser printers, staff will not provide paper. The paper must be laser printer quality, as any other kind of paper will damage the printers.
- Notices are posted on lab bulletin boards identifying times and days the labs will be inaccessible due to classes or CFR events.
- Files should be saved to a USB drive. Files are frequently erased from the lab computers.
- Discs and other storage devices/media brought into the lab must be scanned for viruses prior to each use. Suspected viruses should be reported immediately to the CFR help desk.
- Accessing sexually explicit material is strictly forbidden and will result in disciplinary action by the MSU Dean of Students.
- Food, drink or any form of tobacco is not allowed in the CFR computer laboratories.
- CFR computer labs may experience down times when problems arise. Such downtimes may affect individual lab computers and printers or entire labs and could last for indeterminate periods of time. CFR labs can experience heavy loads throughout the semester. It is the student's responsibility to plan for such occurrences; students are advised to not procrastinate on assignments.

Blatant disregard for the above regulations may result in suspension of computer privileges and/or other disciplinary actions from the MSU Dean of Students.

CONCURRENT ENROLLMENT

Concurrent enrollment (enrollment at MSU and elsewhere during the same semester) requires prior approval and the signatures of the student, advisor, and Coordinator of the Office of Student Services. Students may acquire a Transfer Request form on the CFR web site (see Transfer Credit).

COOPERATIVE EDUCATION

Cooperative Education (Co-op) is a unique learning opportunity that combines classroom training with practical experience to broaden a student's educational experience. Generally, a student will alternate between school semesters and work semesters. Students gain valuable on-the-job training while progressing academically through their degree programs. With successive work semesters, employers usually increase the student's work responsibilities and performance expectations. Work experienced through the Co-op program is rated highly by prospective employers.

Students must complete a minimum of one year at MSU and establish at least a 2.50 GPA before entering the Cooperative Education program. However, most forestry employers prefer students who have completed the forestry Summer Field Program. Students are expected to complete a minimum of three work semesters. Students can transfer one semester of Co-op from a community college toward the three semesters required. Co-op credit hours are not used to satisfy degree requirements. Contact the Cooperative Education Office, 335 McCain Engineering Building, 662.325.3823, or visit: https://www.coop.msstate.edu.

CORE GPA COURSES, DEPARTMENT/MAJOR

The academic departments define their major and concentration courses. Refer to the respective CFR Department for specific policies regarding core courses (see Section II: Department-Specific Policies).

Transfer credits (see Transfer Credit) that are equivalent and are applied to the major and to the concentration core requirements, as defined by the department, are included in the department's core GPA.

COUNSELING AND TESTING SERVICES

The Counseling Center offers personal, group, family and career counseling to students regarding personal concerns, study skills, interpersonal skills, and career choices. The Center offers crisis intervention 24 hours a day, seven days a week. After hours, counselors may be reached by contacting the University Police. Counseling Center services are free and confidential. Counseling Center is located at 101 Lee Hall or students can call 662.325.2091 or visit: https://www.msstate.edu/dept/cts for an appointment.

COURSE LOAD

The normal load for an undergraduate student in a regular semester is 15–19 credit hours. For purposes of reporting a student as full-time to the Board of Trustees, Veterans Administration, Social Security or other similar agencies, an undergraduate student must be enrolled in at least twelve (12) semester hour at the time the report or certification is submitted. This applies to fall and spring semesters only.

Course load limits at Mississippi State University are noted below.

Additional information can be found in the undergraduate catalog.

- A student on academic probation should be limited by his or her academic advisor to an enrollment of 16 credit hours (including ensemble and academic support/developmental classes.)
- Students in good academic standing can take a total of up to 19 credit hours per semester without special permission. Requests to take 20 or 21 credit hours total must be approved at the level of Advisor, Department, and Dean. Requests

to take 22 or more credit hours total must be approved at the levels of Advisor, Department, Dean, and Provost.

COURSE NUMBERING

All course numbers consist of four digits, of which the first (left) digit indicates the level of preparation required (1=Freshmen; 2=Sophomore; 3=Junior; 4=Senior) and the fourth (right) digit indicates the number of semester hours. For instance, WFA 4353 is a senior-level course worth 3 semester hours.

CURRICULUM/CATALOG LIFE

New students follow their major's curriculum (including course requirements, policies, and procedures) that is in place the year they first enroll at MSU provided they graduate within seven years. There is a seven year limit on the completion time for undergraduate students at MSU.

On-campus transfer students from MSU or from another major within the CFR are required, by MSU policy, to follow the curriculum in place the year the student changes to the new major. Students, in consultation with their faculty advisor, may move to a newer curriculum (including that year's policies and procedures in addition to the newer course requirements); but can not move to an older curriculum. Students wishing to move forward in curriculum years must process a Request to Change Curriculum Year Form in the CFR Office of Student Services, 129 Thompson Hall.

Curricula examples and CFR Undergraduate Handbooks are on the CFR web site. If a WFA student stops out (not continuously enrolled in back to back semesters) and returns to college within one year, the student may follow their original curriculum year. If the student returns after more than one year of absence, then the student must move forward to the newest curriculum. In conjunction with MSU policy, if a FO student interrupts his/her enrollment at MSU for two consecutive years or longer, the graduation requirements stated in the catalog under which the student resumes enrollment apply.

DIRECTED INDIVIDUAL STUDY

A Directed Individual Study (DIS) course provides an educational and professional experience that is equal to or greater than the equivalent rigor and hours of a regular class. Forms are available on the CFR web site. Once all appropriate signatures are secured, the student should submit the DIS form to the Coordinator in the CFR Office of Student Services.

The Office of Student Services will create the course in the registration system. After the course has been created, the student will register himself/herself in the course. Refer to the respective CFR Department for department-specific policies regarding applicability of Directed Individual Study (see Section II: Department-Specific Policies).

DISABILITIES, ACADEMIC ACCOMMODATIONS FOR STUDENTS WITH

Students with disabilities must register with the MSU Student Support Services office in order to receive academic accommodations. Current documentation verifying the disability must be on file in this office. Guidelines are detailed at www.msstate.edu/dept/audit/91130.html. Students are responsible for notifying instructors of their accommodation needs.

FINAL EXAMINATION POLICY

The first day of the exam schedule is Reading Day to allow students time to prepare for exams. No mandatory assignment, meeting, or event for a class should be scheduled on Reading Day. All exams shall be held as specified on the exam schedule (found on the Mississippi State University web site: www.msstate.edu). Classes meeting fewer than two hours a week and laboratories will have their exams at the last regular meeting of the class. Evening classes will have their exams at the regular meeting hour of the class during the examination period

Students having more than two final exams in one day should contact all instructors to determine if one of the exams can be rescheduled. If no instructor is willing to reschedule a final exam, the student can contact the Office of the Provost to resolve the problem.

FIREARMS ON CAMPUS

The University prohibits the possession of any firearm, ammunition, any type of explosive, other weapon, firecracker, or the like on university-controlled property. Students found in possession of such may be suspended immediately pending a disciplinary hearing.

GEOSPATIAL AND REMOTE SENSING (GRS) MINOR

Technology revolutions have driven the expectations of remote sensing and geospatial technologies to an all-time high for a new generation of users across a vast number of disciplines. Advances in computational technologies, visualization products, and sensor technologies have led to the development of unprecedented capabilities in geospatial technologies, such as remote sensing and geographic information systems. With the plethora of remote sensing technologies, the industry is poised to develop operational remote sensing applications that fundamentally impact management of resources. Mississippi State University has developed broad, multi-disciplinary efforts in spatial technologies of many types, and is a leader among universities in education and outreach activities to prepare the next generation for utilizing these technologies. One of the primary limitations in the development of this industry is the need for a better-educated workforce that can understand and utilize the tools of these spatial technologies. Education in geospatial and remote sensing technologies is by nature multi-disciplinary; therefore, a minor program that crosses departmental and college boundaries has been developed to address these needs. This undergraduate minor can thus serve the needs of MSU students with diverse backgrounds from a variety of disciplines. Students may strategically assess which courses within their disciplinary academic program can be used for the minor, thus satisfying the needs of both and maximizing their

education experience.

Due to the multi-disciplinary nature of this program, the Office of the Academic Affairs is the resident office for admission and administration. Thus, the program is not focused on a single college or department. A program coordinator, appointed by the Provost, advises students seeking the GRS minor, and assists departmental advisors. The coordinator is also responsible for conducting the necessary transcript audits and authorizing the awarding of the minor.

A total of 15 semester hours are required: nine selected from a list of required courses, and six selected from a list of elective courses. For further information and enrollment information, contact the GRS program coordinator:

Dr. John Rodgers
Department of Geosciences
355 Lee Blvd, 108 Hilbun Hall
Mississippi State, MS 39762
662.325.3915, jcr100@msstate.edu

GRADE POINT AVERAGE

Example GPA Calculation				
		GPA Hours X Quality Points = Quality Points Earned		
		GPA Hours	Quality Points	Quality Points Earned
CO1003	C	3	2	6
CH1043	C	3	2	6
EN1113	B	3	3	9
FO1101	B	1	3	3
MA1313	A	3	4	12
Total		13		36
GPA = Total Quality Points Earned ÷ Total GPA Hours, e.g., GPA = 36 ÷ 13 = 2.77				

Grade Point Average (GPA) is calculated by dividing the total number of quality points earned by the total number of GPA hours. See the Graduation Requirements section for GPAs necessary for graduation. Quality points are based on a four-point system and are awarded as follows: A = 4, B = 3, C = 2, D = 1 and F = 0.

Each department has its own rules for calculating major core GPA. Refer to the respective department for department-specific policies regarding GPA (see Section II: Department-Specific Policies).

GRADUATE SCHOOL

Students interested in graduate school should contact the department that houses the graduate degree program they are interested in for more information on graduate admission and requirements.

GRADUATION AUDIT

Students should initiate a graduation audit with the CFR Office of Student Services two semesters prior to the expected graduation semester. For example, if a student intends to graduate in the spring, he or she should complete his or her audit before the preceding Fall semester. An appointment with the Coordinator of the CFR Office of Student Services is required. The student's faculty advisor is sent a copy of the final audit. A graduation audit ensures that all degree requirements will be met.

The student applies for graduation through their BANNER account before the deadline posted in the Academic Calendar. By midterm of the graduating semester, the student must have all of their MSU accounts paid in full.

A graduation application fee plus late fees (if applicable) will be applied to the student's account.

GRADUATION REQUIREMENTS

To earn the Bachelor of Science degree in the CFR, students must successfully meet the following criteria and steps:

1. Complete all course requirements for the selected major and concentration
2. Earn at least one half of the total hours required for the degree at a senior college
3. Complete from MSU ¼ of degree requirements in junior/senior courses (numbered 3000+)
4. Complete the last 32 hours that are applied to the degree at MSU
5. Earn at least a 2.00 grade point average in the following:
   - Cumulative hours attempted
   - MSU hours attempted
   - Major/concentration core hours as defined by each department
6. Complete a graduation audit two semesters prior to graduation (see Graduation Audit)
7. Apply for graduation (See Graduation Audit) before the deadline.

Academic departments may have additional graduation requirements. See Section II, Department Requirements.

HOLD

Pre-registration and registration privileges are unavailable if a student is on hold. A student may be on hold for various reasons: unpaid traffic tickets, unpaid university bills, failure to return Summer Field Program equipment, etc. Once the hold is taken care of, registration privileges are reinstated.

HONOR CODE, MISSISSIPPI STATE UNIVERSITY

Mississippi State University adopted in 2008 an Honor Code for students: Taken from the MSU web site at https://students.msstate.edu/honorcode. "Mississippi State University is dedicated to the discovery, development, communication and application of knowledge in a wide range of academic and professional fields and assumes as its historic trust the maintenance of freedom of inquiry

and an intellectual environment nurturing the human mind and spirit. The MSU Honor Code is critical to these ideals, to the goal of assuming a place of preeminence in higher education, and to the development of the whole student." Students can see the following statement in every class and will be asked to accept this code:

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

For more information, for definitions of academic misconduct, academic dishonesty sanctions, and procedures pertaining to this Honor Code, visit https://students.msstate.edu/honorcode.

JOB DATABASE
The Jobs Database on the CFR web site, www.cfr.msstate.edu contains professional, summer, and part-time employment, student worker positions, graduate assistantships, and internship opportunities. Students are encouraged to check this site often.

LEARNING CENTER
The Center for Academic Excellence (CAE) helps students improve their academic performance. CAE offers both credit courses and non-credit services to all students. CAE provides assistance to students in a variety of areas, including grammar, study methods, spelling, writing research papers, reading, mathematics, science, statistics, chemistry, physics, and preparation for professional examinations. MSU statistics show that students with good academic standing are frequent visitors to CAE. The CFR recommends that students take advantage of the free services available. For more information, contact The Center for Academic Excellence (CAE), 1st floor YMCA Building, 662.325.2957, www.tlc.msstate.edu. (see Math Domain and Writing Center for more assistance)

MATH DOMAIN
The Math Domain features nearly 100 computers where students can complete class assignments, take quizzes, receive mathematics' tutoring, and homework assistance. Students may visit the Math Domain in Room 111 Allen Hall.

MINORS
A minor in Sustainable Bioproducts is available to other majors across campus. Minors are not offered through the Forestry, Natural Resource and Environmental Conservation, and Wildlife, Fisheries and Aquaculture departments.

Minors to complement CFR degree programs are available to CFR students through other colleges at MSU. These minors include, but are not limited to, Agribusiness, Agriculture Economics, Biology, Communication, Economics, Environmental Science, General Business, Geology, and Leadership Studies. Students pursuing a minor should indicate their intention in the CFR Student Services office and when applying for graduation in Banner. A student can contact the department offering the minor, or the CFR Office of Student Services for more information.

NON-DISCRIMINATION
Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation or group affiliation, age, disability, or veteran status.

The Affirmative Action/Equal Opportunity Officer, 662.325.2493, has been designated as the responsible employee to coordinate efforts to carry out responsibilities and make investigation of complaints relating to discrimination in conformity with Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1974 and the Americans with Disabilities Act of 1990.

OVERRIDES: CLOSED SECTIONS AND CONFLICTS
Permission to enroll in a closed section of a CFR course or override a conflict between two courses requires the signature of the instructor(s) and approval of the department offering the course. Forms are available online and in the Switzer Reading Room.

Students seeking permission to enroll in a closed course offered in another college must seek approval from that college. Overrides are only granted with permission of the instructor and if classroom space is available.

POLICE DEPARTMENT
The MSU Police Department is a full-service agency that is available 24 hours a day throughout the year. The MSU Police Department works toward building partnerships with the University community to provide a safer environment with such programs and services as Cops-on-Bikes, Resident Hall Adopt-A-Cop, Operation Identification, R.A.D. Program, Community Police Officers, Bully Patrol, and Library Patrol. The Police Department may be contacted at 662.325.2121 for information or requests for services: https://www.msstate.edu/dept/police.

The MSU Police Department is also responsible for the management of the University's Parking Program through the registration of vehicles and enforcement of parking rules and regulations. Motorists may contact the Parking Division at 662.325.2665 with questions about parking permits, rules or parking arrangements. Anyone wishing to register his or her vehicle may do so on-line by logging into their student Banner account and linking to Vehicle Registration.

PREREQUISITES/COREQUISITES
Some courses require that another course be taken prior to them (prerequisite) or concurrent with them (corequisite). A prerequisite is meant to convey the minimum amount of background, in terms of academic knowledge or class standing, needed to successfully complete a given course. A corequisite is meant to be taken at the same time as the course for which it is listed because of the complementary nature of the course material.

It is the student's responsibility to be aware of prerequisites and corequisites for all courses required in his or her program; prerequisite/corequisite courses are identified in the MSU Bulletin's Description of Courses section.

A student may not enroll in a course that lists corequisites unless he or she is concurrently enrolled in that corequisite, or he or she has previously passed the corequisite. A student may not drop a corequisite during the drop/add period at the beginning of the semester without also dropping the course for which it is a corequisite.

Any student attempting to enroll in a course for which he or she has: (1) not successfully completed the necessary prerequisites; or (2) not enrolled in or previously completed the necessary corequisite will be force-dropped from the class.

In the CFR, prerequisites/corequisites are enforced at the departmental level on an individual basis. A student seeking to waive a prerequisite/corequisite should discuss this possibility with his or her instructor and, pending instructor authorization, should complete a Request for Prerequisite/Corequisite Waiver form available on the CFR web site. The process requires the signatures of the student, instructor, departmental undergraduate coordinator, and department head. Most CFR classes are offered once a year. This should be considered when making schedule changes. Failure to enroll in a course, or a prerequisite/corequisite, the semester it is offered can delay graduation by a year.

PROFESSIONALISM

Students will exhibit professional behavior and conduct at all times. Non-professional behavior will not be tolerated by the faculty, staff, or students. The CFR Honor Code, the professional society Code of Ethics (e.g., Society of American Foresters, The Wildlife Society, American Fisheries Society, Society of Wood Science and Technology), and common courtesy should be the guiding principles for the personal conduct of students in the CFR.

The success of a professional can be positively or negatively affected by the personal conduct and behavior of the individual. As a student continues to pursue a degree in the CFR, progress as a professional will not be judged solely on technical skills in completing educational assignments or knowledge during examinations. Conduct during these activities will greatly affect treatment as a person and a professional by peers, educators, and employers.

To be a successful professional and a respected member of the community, one must apply the acquired skills of the professional in a way that is acceptable and beneficial to society. Thus, a personal code of conduct is as important to a professional as one's administrative and technical abilities.

PROFESSIONAL EXPERIENCE

Students are encouraged to gain professional experience through part time employment, summer employment, internships, etc. Professional Experience is defined as any job (paid or volunteer) with a company, agency, organization, or person(s) in which you performed duties pertaining to your major and profession and which provided you experience and learning outside the classroom.

If you are uncertain whether or not your work can be deemed professional experience, discuss your specific duties with your advisor to make an accurate determination. Students are asked to provide information about their experience each fall by submitting a resume to the Office of Student Services.

READMISSION REQUIREMENT

Students applying for readmission that meet MSU readmission requirements and have a 2.00 or better GPA will be admitted into the CFR degree programs. Students should see Curriculum/Catalog Life to determine the proper curriculum year to follow. Students with less than a 2.00 GPA will not be admitted to the Departments of Forestry or Wildlife, Fisheries and Aquaculture programs.

RESIDENCY REQUIREMENT

The last 32 hours of coursework must be taken in residence at Mississippi State University. Students must also complete in residence at MSU no less than ¼ of his/her degree program in junior and senior subjects (courses numbered 3000 through 5000) (see Transfer of Credit).

SCHEDULE CHANGES

A student may add a class before 5 p.m. on the sixth class day of a fall or spring semester (second class day of a five week summer session), as long as seats are available, by using Banner Web (refer to the Academic Calendar for specific dates). Late adds after that time must be approved. Students may complete a Drop/Add form, secure signatures of the instructor, the student's advisor, and the Associate Dean or the Student Services Coordinator in the CFR Office of Student Services. In addition, the student must secure signatures on a Student Registration Status available on the Banner web system located under the Student Records menu and accessible by the student. Students must have a clear registration status to have a late add approved. Students are not eligible to register if holds prevented them from registering during the semester's late registration period. The student will be charged a registration change fee.

A student may drop a course up to and including the 5th day of classes during the fall or spring semester (first class day of a five week summer session). The last date to drop a course without a grade can be found in the Academic Calendar on Banner. Students may elect to drop a course from the 6th to the 36th class day. If dropping a FO, SBP, NREC or WFA course, the professor/instructor, the student's advisor and the Student Services Coordinator in the CFR Office of Student Services must approve this drop.

If dropping a course taught outside of the College of Forest Resources, the advisor and the Associate Dean or Student Services

Coordinator in the CFR Office of Student Services must sign the form. A grade of "W" will be assigned on the student's transcript and a fee per course will assessed.

After the 36th day into the semester, students cannot drop a course, except in cases of special circumstances such as accident, illness, or failure of the instructor to provide significant assessment of his/her performance.

Requests for such course drops must be documented in writing and should be directed to the CFR Associate Dean. A student will not be permitted to drop a course after the 36th day of classes because of a heavy course load, a change of major, a repeated course, or the likelihood of poor grades.

Instructors are expected to provide students with test grades within the first 36 days of the semester. A student who has not received feedback by the drop date should contact the Student Services Coordinator in the CFR Office of Student Services.

Most CFR classes are offered once a year or every other year. This should be considered when making schedule changes. Failure to enroll in a course, or a prerequisite/corequisite, the semester it is offered can delay graduation by up to a year or two.

SCHEDULE PREPARATION/PRE-REGISTRATION

During each semester, time is scheduled for advising and pre-registration for the following term. Pre-registration dates are published in the Academic Calendar. Students should be aware of these dates at all times. Every student who plans to return to MSU the next semester should pre-register and should attend a Student Registration Meeting held prior to the advising period.

Steps in pre-registration are:

During the week before pre-registration, students schedule an appointment with their advisor. Advisor names are listed in mystate under student information. Students who fail to make an appointment with their advisor for pre-registration during the week set aside in the MSU Academic Calendar may be prevented from pre-registering at their assigned time.

Before meeting with an advisor, students must prepare a trial schedule using their CAPP curriculum report. Trial schedule templates are available in the CFR Student Lounge and website. Prerequisite/corequisite courses should be checked before scheduling courses.

The student meets with the advisor at the appointed time. The advisor approves the student's schedule and both the advisor and student sign the enrollment form indicating agreement. Advisor and student also sign the Advisor Session form. The Advisor then releases the student for registration. Advisors return a copy of the enrollment form and the advising session forms to the Office of Student Services. Students add the approved schedule by logging into their Banner account and following the menu to Register For Classes.

In preparing a schedule, the following materials should be used: The CFR Undergraduate Handbook for the academic year of the curriculum being followed for degree requirements and policies. Students should bring their CFR Undergraduate Handbook to advising appointments.

The MSU Bulletin for information not found in the CFR Undergraduate Handbook.

The listing of all courses being offered by the University for a particular semester is available through the student's Banner account on the MSU web site and following the Master Schedule link.

SCHOLARSHIPS

Competitive scholarships are offered each year by both the University and the CFR. CFR scholarships are available to students who meet the criteria as stated in the guidelines of each scholarship. CFR scholarships are awarded annually and are not automatically renewable. Students must apply each year for consideration by March 1.

CFR students participating in Cooperative Education are eligible to receive scholarships during the summer immediately following a Spring Co-op semester. To be eligible for scholarship monies for the summer that immediately follows a spring Co-op semester, the student must be enrolled on a full-time basis (12 or more hours) during that summer. The Student Services Coordinator in the CFR Office of Student Services must approve this type of award before the beginning of the summer term in which the student is enrolled.

There are numerous external scholarships available. Announcements from external organizations are posted in the Student Lounge, 131 Thompson Hall. The Office of Student Services may identify students that meet scholarship requirements and will notify these students through e-mail.

STUDENT CONDUCT

Students are expected to conduct themselves as adults and obey the laws, rules, and regulations of the University. Students must take personal responsibility for their conduct and must respect the rights of others. Students not adhering to these expectations are subject to expulsion from the University.

Aspects of misconduct which are unacceptable include, but are not limited to, cheating; destruction or damage to property; hazing, possession of firearms, alcohol, or controlled substances on University property; disorderly conduct while on campus or at an official University function; failure to pay fees; and any violation of civil or criminal ordinances or laws.

Also, inappropriate are acts of discrimination or harassment. Such acts intimidate, assault the dignity of, humiliate or embarrass members of the student body. Such acts cause deterioration of the learning environment and will not be tolerated.

SUBSTITUTION OF COURSES

Required courses for professional curricula are established after careful consideration by the faculty. Often, portions of the curricula are dictated by professional societies or accrediting agencies.

Therefore, substitution is generally not in the best interest of the student. However, a course may be substituted for a required course or professional elective provided the substitution can be justified to the satisfaction of the student's advisor, the department's undergraduate program coordinator, the department head, and the CFR Office of Student Services. Justification to substitute requires a legitimate reason and a logical substitution.

Legitimate reasons for requesting a course substitution include the CFR's failure to teach a required course the semester it is scheduled or conflicts due to CFR scheduling errors. Course substitutions are not granted to resolve scheduling conflicts which occur because the student has failed a class, dropped a scheduled course, neglected to schedule appropriate courses as advised, lacks a prerequisite, or the student is not pursuing education on a full-time basis. Part-time students, including Co-op students, must accept responsibility for schedule conflicts. Students may acquire a Request for Substitution form on the CFR web site. The course substitution process requires the signatures of the student, advisor, department's undergraduate program coordinator, department head, and the CFR Office of Student Services.

TOBACCO ON CAMPUS

Tobacco use in any form is prohibited in university facilities and vehicles.

TRANSFER CREDIT

Students who transfer to MSU from accredited institutions must submit an official transcript to the MSU Admission's Office from each institution attended. Different curricula have different course requirements. Thus, courses accepted by the University may not apply to all college degree programs. Applicability of transfer work depends upon the equivalence of transfer credits to the requirements of a particular curriculum. Applicability is determined by the University, the CFR, and the departments.

Application of community college work is limited to no more than one-half of the total requirements for graduation in a given curriculum at MSU. Once the student is within 32 hours of graduation, no further transfer credits will be accepted (see Residency Requirement). Technical courses are not automatically accepted in the CFR. Each department has a community college transfer guide for most community colleges in Mississippi identifying technical courses that are equivalent to CFR courses.

Any current student who wishes to take a class anywhere other than Mississippi State University, should complete a transfer request form to make sure the credit will transfer back to MSU and apply to the student's major and concentration. Requests for courses from out-of-state should include a copy of the course description. The form can be found on the CFR website (https://www.cfr.msstate.edu/students/current/index.asp)

WETLAND SCIENTIST CERTIFICATION

The Society of Wetland Scientists promotes the management and sustainable use of wetlands. This program is intended to meet the needs of professional ecologists, hydrologists, educators, consultants, and others who practice wetland science. The Society supports education, public awareness, and stewardship of wetlands. Wetland Scientists Professional Certification recognizes the professional in wetland science internationally and provides an advantage when applying for employment. More information and the application for certification can be found at www.wetlandcert.org. Students interested in certification are encouraged to join the Society of Wetland Scientists.

WILDLIFE CERTIFICATION

Certification in the Wildlife Society promotes education, training, and the ethical behavior of wildlife professionals. A higher set of standards for the Certified Wildlife Biologist is required and recognized providing an advantage when applying for employment. Application reviews are conducted by a peer Review Board comprised of wildlife professionals. More information and the application for certification can be found at https://wildlife.org. Students interested in certification are encouraged to join the Wildlife Society and to apply immediately upon graduation as there is a significant difference in application fees.

WITHDRAWAL FROM THE UNIVERSITY

Any student who leaves the University before completion of the academic period in which he or she is enrolled must initiate withdrawal procedures. No withdrawals will be allowed during the last two weeks prior to the beginning of final examinations. Consult the Academic Calendar on the MSU Web site for official deadlines for withdrawing.

Most students who leave the University before the end of a term do so under stressful conditions. The required procedure for withdrawal from the University may seem insignificant at the time. However, it takes little effort and may prevent future difficulties for the student in obtaining transcripts or re-entering the University. Completing the required withdrawal process also prevents F grades from being automatically recorded by the University for all courses the student was enrolled in during the semester.

CFR students should contact the CFR Office of Student Services to discuss the ramifications of withdrawing. It is the student's responsibility to be aware of the ramifications of withdrawing. Examples include, but are not limited to, being required to pay back financial aid (grants, scholarships, or student loans) and other debts the student may have (e.g., resident housing charges; unsettled tuition fees; outstanding parking tickets; telephone charges; library accounts).

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

DEPARTMENT OF SUSTAINABLE BIOPRODUCTS (SB)

Dr. Rubin Shmulsky, Department Head
203 Franklin Center

The bioproducts industry is one of the largest economic contributors to Mississippi, as well as in the United States. Employment in timber conversion, engineered composites, pulp and paper, logging, and furniture manufacturing with employment that rivals that of any other manufacturing sector in the state. Mississippi's bioproducts industry recognizes the need for well trained employees to help increase the conversion efficiencies and alter manufacturing processes to allow compatibility with a changing raw material base. While the industry is large in terms of employment, value-added processing facilities number only a few thousand nationwide and a few hundred in Mississippi.

The mission of the Department of Sustainable Bioproducts is to enhance the intellectual, cultural, social, and professional development of its students by providing them with knowledge and skills needed to utilize and conserve diverse forest and other natural resources effectively. In this regard, the Department's primary teaching responsibility is to provide high quality educational opportunities necessary to adequately prepare students for professional and scientific careers in bioproducts manufacturing, technology, business, and related fields.

The Department of Sustainable Bioproducts' physical plant consists of five laboratory/office buildings and other special purpose buildings and the Franklin Center for Furniture Manufacturing and Management, with a combined floor space in excess of 90,000 square feet. These buildings house the analytical and testing equipment, laboratories, pilot plants, and support facilities required for a comprehensive research program involving wood and wood products.

SUSTAINABLE BIOPRODUCTS MAJOR

Business Concentration
Advisors: Dr. Dan Seale, Franklin Center Room 218
Dr. Frank Owens, Franklin Center Room 109
Students majoring in sustainable bioproducts will develop a strong foundation in properties, manufacturing, environmental implications, sales, and trading of products derived from wood and non-wood materials that come from agricultural residues and other natural fibers. Besides structural materials, specialty chemicals such as polymers and adhesives from natural resources, and bio-based energy such as wood pellets, bio-oil and alcohols are increasingly important with respect to sustainable industrial production. In addition to utilizing timber and agricultural residues, the discipline seeks to make materials last longer and enhance sustainability via preservative treatments and improved design.

Science Concentration
Advisors: Dr. Beth Stokes, Building 3, Room 3206
Dr. Jason Street, Building 5, Room 5204
Designed for students wishing to pursue a scientific research field, work for a wood products industry in research and development, or for students who intend to pursue graduate degrees in wood and biomaterials science. Students may choose to focus their elective classes on the testing of physical and mechanical properties of wood, the chemical protection of wood from biotic and abiotic stresses, environmental impacts and issues associated with treatment and disposal of wood and non-wood products, or development of engineered wood products including pelletized fuels, mass timber products, construction elements, engineered wood panels, and other wood and non-wood bioproducts. Across all areas of study, students receive training in sustainability, current industry practices, and the opportunity to interact with industry professionals.

SUSTAINABLE BIOPRODUCTS MINOR

A Sustainable Bioproducts minor is available to non-majors to provide students with the knowledge of wood products, and bio-based composites, polymers, chemicals and fuels. The courses focus on material properties, environmental issues, and manufacturing principles, as well as their marketing and sales. The topics complement many fields that deal with natural materials: construction, design, business and production management, and scientific fields such as chemistry, engineering, and environmental and biotechnology. A minor in Sustainable Bioproducts also provides non-major students an excellent background for entering a graduate degree program in Sustainable Bioproducts. Academic advising is available in the Department of Sustainable Bioproducts located at 201 Locksley Way. A total of 15 hours is required to obtain a Sustainable Bioproducts minor.

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

2022–2023 SUSTAINABLE BIOPRODUCTS MAJOR
Business Concentration (Sample Schedule)
Total Hours = 124
effective Fall 2020

FRESHMAN YEAR			
Fall Semester		Spring Semester	
EN 1103	English Composition I	EN 1113	English Composition II (EN 1103)
MA 1313	College Algebra (ACT subscore 19)*	MA 1323	Trigonometry (C in MA 1313 or ACT subscore of 24)*
SBP 1103	Intro to Sustainable Bioproducts	SBP 1001	Undergraduate Seminar
BIO 1134	Biology I	BIO 1144	Biology II
	Humanities Elective (3)		Free Elective (3)
			Free Elective (3)
Summer Program			
	SBP 2012	Introduction to Bioproduct Industries	
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
CH 1213 OR CH1234	Chemistry I OR Integrated Chemistry I	CH 1223 OR CH 1244	Chemistry II OR Integrated Chemistry II
SBP 2123	Materials and Processing of Structural Bioproducts	SBP 3113	Physics of Biomaterials
CO 1003 OR CO 1013	Public Speaking Intro to Communication	SBP 3123	Biomass to Bioproducts
EC 2113	Principles of Macroeconomics	SPB 4013	Wood Anatomy
	Statistics Elective	AEC 2713	Intro to Food and Res Economics
JUNIOR YEAR			
Fall Semester		Spring Semester	
SBP 4313	Bioproducts and the Environment	SBP 4243	Sustainable Bioproducts
SBP 4353	Forest Products Marketing	SBP 4253	Quantitative Methods in Sustainable Bioproducts
AELC 3203	Prof Writing ANR Human Sci		Humanities Elective
	Social Science Elective		Fine Arts Elective (3)
			Free Elective (3)
SENIOR YEAR			
Fall Semester		Spring Semester	
MKT 3013	Principles of Marketing	SBP 4443	Capstone Sustainable Bioproducts
FO 4113	Forest Resources Econ	FO 4323	Forest Resource Management
	SBP Major Course (3)		SBP Major Course Elective (3-4)
	SBP Major Course (3)		Professional Elective (3)
	Free Elective (3)		Professional Elective (3)

***Higher level MSU core courses may be taken to complete MA and ST course requirements.**

APPROVED SUBSTITUTIONS LIST FOR SUSTAINABLE BIOPRODUCTS BUSINESS CONCENTRATION	
EN 1103 English Composition I	EN 1104 Expanded English Composition I (For students with ACT subscore of 16 or below on ACT-English)
EN 1113 English Composition II	EN 1173 Accelerated Comp I (Requires subscore of 28 or higher on ACT-English) C or better will earn credit for Comp I and II
MA 1313 College Algebra	MA 1103 College Algebra CoReq (ACT-Math subscore of 17 or 18 AND ACT score of 20 or above)
AEC 2713 Intro to Food & Resource Econ	EC 2123 Prin of Microeconomics
AELC 3203 Prof Writing ANR	MGT 3213 Org Comm (EN 1113, Jr.), BIO 3013 Prof Writing for Biologists (Jr., Bio major or consent of instructor)

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

2022–2023 APPROVED ELECTIVES LIST
Business Concentration

SUSTAINABLE BIOPRODUCTS MAJOR COURSE ELECTIVES	
SBP 3133	Mechanics of Biomaterials
SBP 4000	Directed Individual Study
SBP 4023	Lignocellulosic Biomass Chemistry
SBP 4113	Adhesives and Composites
SBP 4123	Lumber Manufacturing
SBP 4133	Biorefinery Processes
SPB 4153	Biomass Products Manufacturing
SBP 4213	Deterioration and Preserv Biomaterials
SBP 4263	Furniture Design and Fabrication
SBP 4450	Undergraduate Research in Sustainable Bioproducts
SBP 4800	Undergraduate Research
FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2413	His & Appr of the Artcrafts
ART 2063	Global Contemporary Art
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SOPH standing)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVE	
ST 2113	Intro to Stats (ACT math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat Inf (ACT math subscore 24 or C in MA 1313)
BQA 2113	Bus Stat Methods I (MA 1613 or MA 1713 and BIS 1012 or equivalent)
PROFESSIONAL ELECTIVES (6 HOURS)	
Choose any class that is 3000 level or above from the following subjects: ABE (Ag Bio Eng), AEC (Ag Econ), ARC (Architecture), BCH (Biochem), BCS (Build Const Sci), BIO (Biology), BIS (Bis Info Systems), BL (Bus Law), CE (Civil Eng), CH (Chemistry), EC (Economics), EE (Electrical Engr), EG (Engr Graphics), EM (Engr Mech), EPP (Entomology, Plant Path), FIN (Finance), FO (Forestry), GR (Geography), IE (Industrial Eng), TKI (Industrial Tech), LA (Landscape Arch), MGT (Management), MKT (Marketing), MA (Math), ME (Mechanical Eng), NREC (Nat Res Environ Conser), PH (Physics), PS (Political Sci), PSS (Plant Soil Sci), SBP (Sustainable Bioproducts), ST (Statistics), WFA (Wildlife Fish Aquaculture)	

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families
HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

2022–2023 SUSTAINABLE BIOPRODUCTS MAJOR
Science Concentration (Sample Schedule)
Total Hours = 124
effective Fall 2020

FRESHMAN YEAR			
Fall Semester		Spring Semester	
EN 1103	English Composition I	EN 1113	English Composition II (EN 1103)
MA 1313	College Algebra (ACT subscore 19)*	MA 1323	Trigonometry (C in MA 1313 or ACT subscore of 24)*
SBP 1103	Intro to Sustainable Bioproducts	SBP 1001	Undergraduate Seminar
BIO 1134	Biology I	BIO 1144	Biology II
	Humanities Elective (3)	EC 2113	Prin of Macroeconomics
			Free Elective (3)
Summer Program			
	SBP 2012	Introduction to Bioproduct Industries	
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
CH 1213 OR CH1234	Chemistry I OR Integrated Chemistry I	CH 1223 OR CH 1244	Chemistry II OR Integrated Chemistry II
SBP 2123	Materials and Processing of Structural Bioproducts	SBP 3113	Physics of Biomaterials
CO 1003 OR CO 1013	Public Speaking Intro to Communication	SBP 3123	Biomass to Bioproducts
SBP 3133	Mechanics of Biomaterials	SPB 4013	Wood Anatomy
	Statistics Elective		Social/Behavioral Science Elective (3)
JUNIOR YEAR			
Fall Semester		Spring Semester	
SBP 4313	Bioproducts and the Environment	SBP 4243	Sustainable Bioproducts
SPB 4113	Adhesives and Composites	SPB 4023	Lignocellulosic Biomass Chemistry
BCH 4013	Principles of Biochemistry	BIO 3304	General Microbiology
AELC 3203	Prof Writing ANR Human Sci		Humanities Elective
			Fine Arts Elective (3)
SENIOR YEAR			
Fall Semester		Spring Semester	
CH 2503	Elem Organic Chemistry	SBP 4443	Capstone Sustainable Bioproducts
CH 2501	Elem Organic Chem Lab		SBP Major Course Elective (3-4)
EPP 3124	Forest Pest Management		SBP Major Course Elective (3-4)
	SBP Major Course Elective (3)		Professional Elective (3)
	Free Elective (3)		Professional Elective (3)

***Higher level MSU core courses may be taken to complete MA and ST course requirements.**

APPROVED SUBSTITUTIONS LIST FOR SUSTAINABLE BIOPRODUCTS SCIENCE CONCENTRATION	
EN 1103 English Composition I	EN 1104 Expanded English Composition I (For students with ACT subscore of 16 or below on ACT-English)
EN 1113 English Composition II	EN 1173 Accelerated Comp I (Requires subscore of 28 or higher on ACT-English) C or better will earn credit for Comp I and II
MA 1313 College Algebra	MA 1103 College Algebra CoReq (ACT-Math subscore of 17 or 18 AND ACT score of 20 or above)
AELC 3203 Prof Writing ANR	MGT 3213 Org Comm (EN 1113, Jr.), BIO 3013 Prof Writing for Biologists (Jr., Bio major or consent of instructor)

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

2022–2023 APPROVED ELECTIVES LIST
Science Concentration

SUSTAINABLE BIOPRODUCTS COURSE ELECTIVES	
SBP 4000	Directed Individual Study
SBP 4123	Lumber Manufacturing
SBP 4133	Biorefinery Processes
SBP 4144	Biocomposite Application and Manufacturing
SBP 4153	Biomass Products Manufacturing
SBP 4213	Deterioration and Preservation of Biomaterials
SBP 4253	Quantitative Methods in SBP
SBP 4263	Furniture Design and Fabrication
SBP 4353	Forest Products Marketing
SBP 4450	Undergraduate Research in Sustainable Bioproducts
SBP 4800	Undergraduate Research
FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SOPH standing)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVE	
ST 2113	Intro to Stats (ACT math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat Inf (ACT math subscore 24 or C in MA 1313)
BQA 2113	Bus State Methods I (MA 1613 or MA 1713 and BIS 1012 or equivalent)
PROFESSIONAL ELECTIVES (6 HOURS)	
Choose any class that is 3000 level or above from the following subjects: ABE (Ag Bio Eng), AEC (Ag Econ), ARC (Architecture), BCH (Biochem), BCS (Build Const Sci), BIO (Biology), BIS (Bis Info Systems), BL (Bus Law), CE (Civil Eng), CH (Chemistry), EC (Economics), EE (Electrical Engr), EG (Engr Graphics), EM (Engr Mech), EPP (Entomology, Plant Path), FIN (Finance), FO (Forestry), GR (Geography), IE (Industrial Eng), TKI (Industrial Tech), LA (Landscape Arch), MGT (Management), MKT (Marketing), MA (Math), ME (Mechanical Eng), NREC (Nat Res Environ Conser), PH (Physics), PS (Political Sci), PSS (Plant Soil Sci), SBP (Sustainable Bioproducts), ST (Statistics), WFA (Wildlife Fish Aquaculture)	

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Greek and Latin Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
SOCIAL SCIENCE/BEHAVIORAL ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families

SECTION II: DEPARTMENT OF SUSTAINABLE BIOPRODUCTS

2022–2023 APPROVED ELECTIVES LIST
Science Concentration

SOCIAL SCIENCE/BEHAVIORAL ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families

PROFESSIONAL ELECTIVES (6 HOURS)

Choose any class that is 3000 level or above from the following subjects: ABE (Ag Bio Eng), AEC (Ag Econ), ARC (Architecture), BCH (Biochem), BCS (Build Const Sci), BIO (Biology), BIS (Bis Info Systems), BL (Bus Law), CE (Civil Eng), CH (Chemistry), EC (Economics), EE (Electrical Engr), EG (Engr Graphics), EM (Engr Mech), EPP (Entomology, Plant Path), FIN (Finance), FO (Forestry), GR (Geography), IE (Industrial Eng), TKI (Industrial Tech), LA (Landscape Arch), MGT (Management), MKT (Marketing), MA (Math), ME (Mechanical Eng), NREC (Nat Res Environ Conser), PH (Physics), PS (Political Sci), PSS (Plant Soil Sci), SBP (Sustainable Bioproducts), ST (Statistics), WFA (Wildlife Fish Aquaculture)

SUSTAINABLE BIOPRODUCTS SCIENCE CONCENTRATION REQUIRED COURSES

SBP 3133	Mechanics of Biomaterials
SBP 4023	Lignocellulosic Biomass Chemistry
SBP 4113	Adhesives and Composites
CH 2503	Elementary Organic Chemistry
CH 2501	Elementary Organic Chemistry Lab
BIO 3304	General Microbiology
BCH 4013	Principles of Biochemistry
EPP 3124	Forest Pest Management

SECTION III: DEPARTMENT OF FORESTRY

DEPARTMENT OF FORESTRY (FO)
Dr. Donald L. Grebner, Department Head
105 Thompson Hall

DEPARTMENT OF FORESTRY ACADEMIC POLICIES AND PROCEDURES

Distance Learning Courses
Distance learning courses (online) offered by an accredited college or university will be evaluated similarly to accepted transfer courses. Distance learning courses at MSU may be applied to the Forestry major in consultation with the student's advisor.

In addition, questionable distance learning courses offered through another accredited college or university for credit will be evaluated for equivalency at MSU after the student provides a course syllabus and proof that the course is part of a degree program at the institution granting a letter grade. The CFR Office of Student Services in consultation with the Department's Undergraduate Coordinator will review the course or courses for applicability toward a forestry degree at MSU.

Continuing Education credits cannot apply toward a degree. Articulation agreements with community colleges are still in place and have not changed.

Directed Individual Study Courses
Directed Individual Study (DIS) courses can be applied to the FO and NREC majors as a professional elective with prior approval. DIS courses may not be used as substitutes for FO or NREC major core courses. The approval process requires completion of the DIS form available on the CFR website and must have signatures of the student, instructor, student's advisor, Undergraduate Coordinator, Department Head(s) of the instructor and the student, and CFR Associate Dean. Once approved, the DIS form must be on file in the Office of Student Services.

Internships
Forestry and NREC majors have an opportunity to satisfy one 3-hour elective with an internship experience (FO 3003). Students may apply for any number of internships for credit during their undergraduate years; however, only one elective course substitution will be allowed. Internships are a critical component of a student's professional development and provide the opportunity to gain work experience. The purpose of the internship is that it is critical that students have the opportunity to more actively participate in forestry or natural resource-related activities associated with his or her intended career above and beyond laboratory work. A student, junior standing or above, majoring in the Forestry undergraduate program with at least one elective available (i.e., professional, business/science, emphasis) may apply for an internship. For students in the Wildlife Management concentration this does not include using the professional elective set aside for wildlife biologist certification requirements. Note, students can always add three internship hours to their program during any semester to incorporate an internship opportunity. Summer work opportunities will require that the student enroll for the internship course in the fall. Full semester internships will only be eligible for three hours, given that other requirements are met. A student most apply for an internship prior to the start date of the internship/work experience. See Dr. Ian A. Munn, 107 Thompson Hall, 662.325.1379 before the beginning of the internship.

Professional Expectations for Students in the Forestry Department
Students graduating from the Department of Forestry in both the Forestry and NREC majors will more than likely pursue professional careers and are expected to conduct themselves as professionals beginning with their education. Behaviors and habits developed now will carry over and affect your career progress. Forestry and other natural resources are more than trees and water; working with people is an important element of your successful career. You will interact with people from all walks of life, in all manner of ways. Respecting others, being aware of how your behavior affects them, and the impression you are conveying is crucial to your professional development. Your demeanor and actions reflect on you and Mississippi State University, the College of Forest Resources and the Department of Forestry, our faculty, and the student body. Therefore, you should conduct yourself appropriately with regard to conduct, appearance, and respect for others.

Special Topics Courses
Special Topics courses can be substituted for professional electives in the FO and NREC majors with prior approval. Special Topics courses may not be used as substitutes for FO and NREC major core courses. The approval process requires completion of the Substitution Form available on the CFR website and must have the signatures of the student, student's advisor, Undergraduate Coordinator, Department Head of the student, and CFR Associate Dean. The title, justification of the course substitution, course description, and course applicability must be provided. Once approved, the Substitution Form will be on file in the Office of Student Services.

Student Leadership Recognition Program
The purpose of the leadership program is to introduce students to activities offered by the Department, the CFR, MSU, and beyond

to stimulate them to voluntarily participate and recognize the importance of participating. This recognition of being a student leader, and one who is active in extracurricular activities, is a worthy addition to student resumes. Interested students should see Dr. Stephen C. Grado, Room 357 Thompson Hall, 662-325-2792.

International students

International undergraduate students must demonstrate English proficiency to be admitted into the NREC program. NREC requires a TOEFL score of at least 550.

SECTION III: DEPARTMENT OF FORESTRY

FORESTRY MAJOR

The Forestry major is a science-based program leading to a Bachelor of Science degree in Forestry and consists of six concentrations: Environmental Conservation, Forest Business Forest Management, Forest Products, Urban Forestry, and Wildlife Management. Concentrations are accredited by the Society of American Foresters (SAF). The Forest Products concentration is also accredited by the Society of Wood Science and Technology (SWST). By combining a general education with specialized professional courses, the curriculum is designed to produce graduates who have skills in interpersonal communications, written and oral communications, and cultural understanding. Graduates of the major are qualified to become a Registered Forester in Mississippi after successfully completing an examination for this purpose with the Board of Registration for Foresters (BORF) in Mississippi. Graduates are also qualified to become Society of American Forester Certified Foresters if successfully completing an exam.

Graduates are fully qualified as entry-level professionals and prepared for career advancement into positions of responsibility, while serving the current and future needs of society. The forestry major also prepares students for graduate school in any natural resource-related field.

FORESTRY CONCENTRATIONS

Students must complete a specified core curriculum and one of six concentrations within the major:

- Environmental Conservation
- Forest Business
- Forest Management
- Forest Products
- Urban Forestry
- Wildlife Management

Environmental Conservation

Today's forestry professionals strive to balance commodity production with environmental conservation. This concentration is designed for students interested in focusing on complex environmental issues in the realm of natural resource management. While being educated as foresters, students concentrate on contemporary environmental concerns within three emphasis areas: social, land, and science.

Forest Business

Students will select a business minor from the College of Business. 21 hours of Business/Forest Business electives are required to complete the Forestry/Business concentration. If the chosen minor has a course load less than 21 credit hours required by the minor, the student will enroll in forest business electives to complete the 21 hours.

The College of Business offers a variety of minors to complement the forestry major. A current listing of available minors and their requirements can be found at www.business.msstate.edu/academics/minors.

Available minors: Real Estate*, Business Information Systems, Economics, Insurance, Finance*, Business Analytics*, Management, Marketing, Accounting*, Business Administration*, and Entrepreneurship*. (*Some minors will require additional prerequisites which will require more than 21 hours of coursework for the minor.)

Forest Management

Designed for students who intend to pursue professional careers in forest land and timber management and use in both the public and private sectors. Students may select from a wide range of electives to meet specific career objectives; for example, emphasis in areas such as business, communications, and geographical information systems in forestry and related sciences.

Forest Products

The use of wood as a material requires a fundamental understanding of wood properties, manufacturing processes, and the marketing of wood products. Students are prepared for positions in wood manufacturing, marketing, and research. Employers include lumber, pulp and paper mills, furniture manufacturers, and retail marketers of wood materials.

Urban Forestry

Addresses an emerging need for the management of trees in towns and cities, and the urban/wildland interface. Urban and community foresters manage trees along city streets, in municipal parks, private woodlots, and utility right-of-ways. Employers include federal, state, and municipal governments, private consultants, and industry.

Wildlife Management

Designed for students interested in careers that emphasize wildlife management within the context of multiple-use management of forest land. The concentration fulfills course requirements for certification as wildlife biologists by The Wildlife Society. Many graduates of this concentration undertake graduate studies in wildlife biology and related areas to qualify for entry-level positions as wildlife biologists.

FORESTRY MAJOR GPA REQUIREMENTS

FO Major Required Courses

The following courses are required by all Forestry majors. A minimum grade of C is required in each course listed below:

- FO 1101 Forest Resources Survey
- FO 2113 Dendrology
- FO 2213 Forest Measurements
- FO 3012 Intro to Forest Communities
- FO 3015 Forest Description and Analysis
- FO 3103 Computer Appl for For Resources
- FO 4113 Fores Res Economics
- FO 4123 Forest Ecology
- FO 4213 Forest Biometrics
- FO 4221 Practice of Silviculture Lab
- FO 4223 Practice of Silviculture
- FO 4231 Intro to Wood Supply Systems
- FO 4233 Forest Op & Harvest
- FO 4313 Spatial Tech in Nat Res
- FO 4323 For Res Mgt
- FO 4413 Nat Res Policy
- FO 4423 Prof Practice
- WFA 3031 Intro to Wildlife & Fisheries Practices
- WFA 4153 Prin Wild Con & Man

A waiver to the C or better policy may be granted in cases in which there were extenuating circumstances.

An appeal of the C requirement for FO major required courses can only be initiated if a student earned a D in a core course. A grade of F can not be appealed. If a student wants to contest the C grade policy, the student must initiate the appeal with a signed letter to the Department Head explaining the reasons for the appeal. Include at the bottom of the letter a signature line for the instructor, student's advisor, and Department Head with a check box for each indicating agreement or disagreement. Once this letter is received, the Department Head will meet with the student, student's advisor, and instructor. Upon making a decision, the Department Head will notify the Office of Student Services, the student, student's advisor, and instructor of the decision. A copy of the letter and any other documentation will be kept on file in the Department Head's office and in the student's file in the Office of Student Services.

FO Major Requirements

- The computer requirement for FO majors is FO 3103. No exceptions are allowed.
- The survey course requirement is FO 1101. Students who change from the WFA major to the FO major and who have taken WFA 1102 may substitute this course for FO 1101.
- FO concentrations requiring a forestry law course must take FO 4353. Wildlife and Fisheries Policy and Law Enforcement (WFA 4353) cannot be substituted.

FO Summer Field Program

Before the junior year, Forestry students must complete a Summer Field Program. The Summer Field Program is a 9-week session comprised of four courses. The courses include: Introduction to Forest Communities (FO 3012), Forest Description and Analysis (FO 3015), Introduction to Wood Supply Systems (FO 4231), and Introduction to Wildlife and Fisheries Practices (WFA 3031). Prerequisites for this program are Dendrology (FO 2113), Forest Measurements (FO 2213), Statistics (ST 2113), and Soils (PSS 3303).

The Program is conducted on campus as well as on the John W. Starr Memorial Forest, Tombigbee National Forest, and Sam D. Hamilton Noxubee National Wildlife Refuge. In addition, the Introduction to Wood Supply Systems course frequents other nearby locations. Application information for the Summer Field Program can be found on the CFR website.

Forestry/Business Double Degree Program (for Forest Management concentration)

A five-year curriculum leading to a Bachelor of Science in the Forest Management concentration of the FO major and a Bachelor of Business Administration in the College of Business is available. Several business and forestry courses can be double counted toward the dual degree. Contact the CFR Office of Student Services for more information.

Transfer Students

Transfer students are encouraged to enter the Department of Forestry at MSU in the Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward the degree. Only course work that is determined by the Department of Forestry to be equivalent to required course work will be accepted.

NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION MAJOR

The Natural Resource and Environmental Conservation major objectives are to prepare its graduates for professional careers by: 1) providing the broader general education fundamentals of written and oral communication; mathematics; biological, social, and physical sciences; and humanities which are critical to the development and advancement of well-qualified professionals; 2) providing both the relevant domains of knowledge and their application to the solution of real-world problems and achievement of defined objectives, including in-depth coverage of ecology and biology; measurement and evaluation of natural resource environmental components, properties, and functioning; management of ecosystems; and legal, regulatory, policy, and economic aspects of ecosystem administration and management; 3) establishing awareness of historical and current issues and policies affecting ecosystem management and conservation; and 4) providing a variety of educational experiences including lectures, discussion, simulations, computer applications, individual and group projects in laboratories and field experiences, and a capstone course teaching students to conduct environmental impact assessments. The purpose of these experiences is to ensure that graduates of the program can knowledgeably develop, apply, facilitate, and/or execute natural resource and environmental management plans that adequately address matters of ownership/public goals and objectives, ecosystem health and sustainability, and the legal and regulatory environment.

The Major

The core curriculum of the Natural Resource and Environmental Conservation major is comprised of specifically selected and intentionally designed courses that provide students with a broad background in the science, technology, and the social aspects of natural resource and environmental science. In addition to general education and major core requirements, students will complete one of three concentrations: Natural Resource Law and Administration, Resource Conservation Science, or Natural Resource Technology.

NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION CONCENTRATIONS

Students must complete a specified core curriculum and one of three concentrations within the major:

- Natural Resource Law and Administration
- Natural Resource Technology
- Resource Conservation Science

Natural Resource Law and Administration

There are numerous laws, regulations, and policies affecting natural resource administration and management that have created a need for professionals with an understanding of the complex interactions between the science of managing natural resources and the laws, regulations, policies, and processes involved in their utilization and protection. This concentration will provide students with a background in the science of natural resource management as well as a foundation in the legal, regulatory, and administrative environment in which this management occurs. Students completing this program will be prepared for post-graduate studies in law, public policy administration, and a wide range of natural resource disciplines, as well as employment with private and public organizations and agencies.

Natural Resource Technology

Modern protocols for natural resource monitoring and management are highly dependent on utilization of spatial technologies such as remote sensing and geographic information systems (GIS). Spatial technologies and allied measurement and quantitative disciplines, combined with general knowledge needed for resource management, are essential in public- and private-sector natural resource professions. Students will also be amply prepared to continue with graduate studies in this area. This concentration is specifically designed to provide students with the fundamental background to meet the rapidly growing need for professionals who can collect, manage, and manipulate complex geospatial and ancillary data used in natural resource management.

Resource Conservation Science

There is a need for expertise in resource conservation that relies on a science-based education and an understanding of effective applications of this knowledge to solve problems in natural resource settings. This concentration promotes learning and skill sets in resource conservation and science that will meet this objective. Universities and employers are looking for natural resource professionals who have the necessary tools to be able to attend graduate school or become employed by private organizations, private industry, and state and federal agencies whose primary mission is environmental protection and resource conservation. This is particularly important since these organizations and agencies are under increasing demands to document and verify their activities in both protecting natural resources (i.e., aquatic and terrestrial) and assessing impacts on human, floral, and faunal populations relying on these environments.

NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION MAJOR

NREC Major Required Courses

The following courses are required by all NREC majors. A minimum grade of C is required in each course listed below:

- FO 1101 Forest Resources Survey
- FO 2113 Dendrology
- FO 3103 Computer Appl For Resources
- FO 4213 Forest Biometrics
- FO 4313 Spatial Tech in For Res
- FO 4343 Forest Admin & Organization
- NREC 3113 Forest Rec Management
- NREC 4353 Natural Resource Law
- NREC 4413 Natural Resource Policy
- NREC 4423 Environmental Assessments
- WFA 3133 Applied Ecology

SECTION III: DEPARTMENT OF FORESTRY

FORESTRY AND NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION CURRICULA

A student enrolled in the Forestry (FO) major must complete a specified core curriculum and one of six academic concentrations within the major:

- Environmental Conservation
- Forest Business
- Forest Management
- Forest Products
- Urban Forestry
- Wildlife Management

A student enrolled in the Natural Resource and Environmental Conservation (NREC) major must complete a specified core curriculum and one of three academic concentrations within the major:

- Natural Resource Law and Administration
- Natural Resource Technology
- Resource Conservation Science

An example curriculum for each of these concentrations follows. The example curricula should be followed by those students entering MSU as freshmen or transferring during the Fall 2020, Spring 2021, or Summer 2021 semesters and by those students changing majors into a CFR major from another major on campus.

- Prerequisites are shown in parentheses.
- Approved substitutions for each concentration are listed on the corresponding concentrations' electives list page. Approved substitutions do not require processing a substitution form.
- The list of approved electives is provided following the respective example curriculum pages.
- The semester courses that are taught every other year are shown in parentheses.

Acronyms used for Department of Forestry Concentrations	
FO/ENCO	Environmental Conservation
FO/BUSN	Forest Business
FO/FOMG	Forest Management
FO/FP	Forest Products
FO/URBN	Urban Forestry
FO/WFMG	Wildlife Management
NREC/NRLA	Natural Resource Law and Administration
NREC/NRT	Natural Resource Technology
NREC/RCS	Resource Conservation Science

ENCO

2022–2023 FORESTRY MAJOR
Environmental Conservation Concentration (Sample Schedule)
Total Hours = 127

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro to Food and Res. Economics
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
	Humanities Elective (3)	EN 1113	English Composition II (EN1103)
EN 1103	English Comp I (ACT English subscore 17)	MA 1313	College Algebra (ACT math subscore 19)
FO 1101	**Forest Resources Survey**	CO 1003	Fund. of Public Speaking
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology** (BIO 1144 or 2113)	**FO 3103**	**Computer Appl. For. Resources**
FO 3113	Forest Recreation Mgt.	**FO 2213**	**Forest Measurements** (ST 2113)
PSS 3303	Soils (CH 1043)		Physical Science Elective
ST 2113	Intro. to Statistics (C in MA 1313 or MA 1213 or ACT math subscore 24)		Humanities Elective (3)
	Emphasis Elective (3)		
Summer Field Program			
		FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)
		FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)
		FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)
		WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)
JUNIOR YEAR			
Fall Semester		Spring Semester	
WFA 3133	Applied Ecology (BIO 1134, 1144)	AELC 3203	Prof. Writing in Ag, NR & Human Sci (JR) (EN 1103, 1113)
EPP 3124	Forest Pest Management	**FO 4113**	**Forest Res. Econ.** (AEC 2713)
FO 4123	**Forest Ecology**	**FO 4213**	**Forest Biometrics** (ST 2113, FO 2213 or NREC 3213)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)	**FO 4223**	**Practice of Silviculture** (FO 4123)
	Fine Arts Elective (3)	**FO 4221**	**Practice of Silviculture** Lab (FO 4123)
			Emphasis Elective (3)
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	**FO 4413**	**Natural Res. Policy** (SR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4423**	**Prof. Practice** (FO 4323)
		FO 4453	Remote Sensing Appl.
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)	FO 4463	Forest Hydro & Watershed Mgt. (PSS 3303, FO 4123)
			Emphasis Elective (2)
	Emphasis Elective (3)		
	Emphasis Elective (3)		

Forestry major required courses requiring a C or better or bolded.

SECTION III: DEPARTMENT OF FORESTRY

ENCO

2022–2023 APPROVED ELECTIVE LIST
Environmental Conservation Concentration
Emphasis Electives: Choose 14 hours from among the three emphasis areas below (Consult Your Advisor):

LAND EMPHASIS ELECTIVES	
ABE 2873	Land Surveying (MA 1323)
FO 3203	Forest Fire
FO 4473	GIS Nat. Res. Mgt. and Lab (JR)
FO 4573	Ecology of Managed Forests
FO 4483	Forest Soils (PSS 3303, FO 3012, FO 4123) (SP Odd)
GG 1113	Survey of Earth Sciences I
GG 1111	Earth Sciences I Lab
GG 3133	Intro. Environmental Geology (GG 1113)
GR 1114	Physical Geography
GR 3113	Conservation of Natural Resources
GR 4203	Prin of GIS
GR 4603	Climatology (GR 1114 or GR 1123)
PSS 4333	Soil Cons. and Use (PSS 3303)
Courses for a GIS minor, may be used as emphasis electives	
SOCIAL EMPHASIS ELECTIVES	
CFR 1101	Ambassador Lead Dev (up to 3 hrs)
FO 3000	Internship
FO 4343	Forest Admin. and Organization
FO 4353	Natural Resource Law (JR)
FO 4683	Intro to Urban and Community Forestry
PHI 1123	Intro. to Ethics
PHI 3313	Environmental Ethics
PHI 4143	Philosophy of Science
SO 4703	Population Prob. (SO 1003)
SO 4173	Environment and Society
SCIENCE EMPHASIS ELECTIVES	
BIO 4203	Tax. of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
ENS 2103	Intro Environ Science
FO 3213	Tree Physiology (BIO 1134, BIO 1144)
NREC 3213	Environmental Measurements (ST 2113)
NREC 4423	Environmental Assessments (NREC SR)
WFA 4233	Limnology (WFA 3133)
WFA 4383	Wetlands Ecology & Mgt (JR, WFA 3133) (FL Even)
WFA 4623	Conservation Biology
WFA 4633	Problem Solving in Conservation Biology

FINE ARTS ELECTIVES (3 HOURS)	
ARC 1013	Architectural Appreciation
ART 1013	Art History I
ART 1023	Art History II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	Hist. and Appr. of the Artcrafts
CO 1503	Intro. to Theater
LA 1803	Landscape Architecture Appr.
MU 1103/AAS 1103	African American Music
MU 1113	History and Appr. of Music
PE 1323	History and Appr. of Dance
PSS 2343	Floral Design
HUMANITIES ELECTIVES (6 HOURS)	
ARC 2313/3313	History of Architecture
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro. to Literature (EN 1103, EN 1113)
EN 2213/2223	English Literature (EN 1103, EN 1113)
EN 2243/2253	American Literature I (EN 1103, EN 1113)
EN 2273/2283	World Literature I (EN 1103, EN 1113)
FL 1113/1123	Elem. Foreign Language[1]
HI 1063/1073	Early or Modern US History
HI 1163/1173	World History I or II
HI 1213/1223	Early or Modern Western World
HI 1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
PHI 1123	Intro. to Ethics
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II
[1]French, German, Greek, Japanese, Latin, Russian, and Spanish	
PHYSICAL SCIENCE ELECTIVES	
CH 1053	Survey of Chem II (CH 1043)
GR 1114	Physical Geography
PH 1113	General Physics (ACT Math Subscore 26 or MA 1323)
GENERAL EMPHASIS ELECTIVES	
FO, NREC, SBP, WFA	Any course 3000 or higher

SECTION III: DEPARTMENT OF FORESTRY

ENCO

APPROVED SUBSTITUTIONS LIST FOR ENVIRONMENTAL CONSERVATION CONCENTRATION	
Required Courses	Approved Substitutions
AEC 2713 Intro to Food & Resource Economics	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof Writing Ag, NR, Human Sci.	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR)(EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 1113)
CO 1003 Fundamentals of Pubic Speaking	CO 1013 Introduction to Communication
CH 1043 Survey of Chemistry I	Any higher level chemistry course.
FO 4453 Remote Sensing Applications	FO 4473 GIS for Natural Resource Management (JR)
FO 4463 Forest Hydro & Watershed Management	FO 4483 Forest Soils (PSS 3303, FO 3012, FO 4123)
EN 1103 English Comp !	C or better in EN 1104 Expanded English Comp ! (ACT English Sub-score of 16 or below)

FOBN

2022–2023 FORESTRY MAJOR
Forest Business Concentration (Sample Schedule)
Total Hours = 128 (effective Summer 2020)

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713 or EC 2123	Intro to Food and Res Economics or Microeconomics
CH 1043	Survey of Chemistry I		
EN 1103	English Comp. I (ACT English subscore 17)	BIO 1144	Biology II
FO 1101	**Forest Resources Survey**	EN 1113	English Comp. II (EN 1103)
MA 1313	College Algebra (ACT math subscore 19)		Humanities Elective (3)
SBP 1103	Intro to Sustainable Bioproducts	CO 1003	Fund. of Public Speaking
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology (BIO 1144 or 2113)**	**FO 3103**	**Computer Appl. For. Resources and Lab**
FO 3113	Forest Recreation Mgt.	**FO 2213**	**Forest Measurements (ST 2113)**
	Physical Science Elective (3)		Business Minor Course[1]
PSS 3303	Soils (CH 1043)		Fine Arts Elective (3)
ST 2113 or BQA 2113	Intro to Statistics (C in MA 1313, MA 1213, or ACT math subscore 24) or Business Stat Methods		Humanities Elective (3)
Summer Field Program			
FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)		
FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)		
FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)		
WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)		
JUNIOR YEAR			
Fall Semester		Spring Semester	
AELC 3203	Prof. Writing for Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)	**FO 4113**	**Forest Resource Economics** (AEC 2713)
		FO 4213	**Forest Biometrics** (ST 2113, FO 2213, or NREC 3213)
EPP 3124	Forest Pest Management	**FO 4223**	Practice of Silviculture (FO 4123)
FO 4123	**Forest Ecology**	**FO 4221**	**Practice of Silviculture Lab** (FO 4123)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)		Business Minor Course[1]
	Business Minor Course[1]		Business Minor Course[1]
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	**FO 4413**	**Natural Res. Policy** (SR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4423**	**Prof. Practice** (FO 4323)
			Business Minor, Forest Business, or Professional Elective[2]
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)		Business Minor Course[1]
	Business Minor, Forest Business, or Professional Elective[2]		

Forestry major required courses requiring a C or better or bolded.

[1]If a business minor has a course load less than 21 credit hours required by a minor in business administration (e.g. 18 credit hours required by a minor in finance), a student will substitute the difference in credit hours by enrolling in an additional forest business elective. If a business minor requires less than 18 credit hours (e.g. 15 credit hours required by a minor in real estate), a student will substitute the difference in credit hours by enrolling in an additional forest business elective first and then enrolling in professional electives to maintain the program total of 128 credits hours.
[2]Electives are selected from the list of electives approved by the Department of Forestry faculty.

FOBN

2022–2023 APPROVED ELECTIVE LIST
Forest Business Concentration

HUMANITIES (6 HOURS)		FINE ARTS (3 HOURS)	
ARC2313/3313	History of Architecture	ARC 1013	Architectural Appreciation
EN/FL 2123	Greek and Latins Roots of English	ART 1013	Art History I
EN 2203	Intro. to Literature (EN 1103, EN1113)	ART 1023	Art History II
EN2213/2223	English Literature (EN 1103, EN1113)	ART 1113	Art Appreciation
EN2243/2253	American Literature I (EN 1103, EN1113)	ART 2063	Global Contemporary Art
EN2273/2283	World Literature I (EN 1103, EN1113)	ART 2413	Hist. and Appr. of the Artcrafts
FL1113/1123	Elem. Foreign Language[1]	CO 1503	Intro. to Theater
HI 1063/1073	Early or Modern US History	LA 1803	Landscape Architecture Appr.
HI 1163/1173	World History I or II	MU 1103/ AAS 1103	African American Music
HI 1213/1223	Early or Modern Western World		
HI 1313/1323	East Asian Civilizations I or II	MU 1113	History and Appr. of Music
PHI 1103	Intro. to Philosophy	PE 1323	History and Appr. of Dance
PHI 1123	Intro. to Ethics	PSS 2343	Floral Design
REL 1103	Intro. to Religion	**FOREST BUSINESS ELECTIVES**	
REL 3213	World Religions I	FO 4253	Timber Procurement (FO 4231, FO 4233)
REL 3223	World Religions II	FO	Timber Investment (pending approval)
PHYSICAL SCIENCE ELECTIVES		FO	Computer Applications for Forest Resources II (pending approval)
CH 1053	Survey of Chem II (CH 1043)		
GR 1114	Physical Geography		
PH 1113	General Physics (ACT Math Subscore 26 or MA 1323)		

For Business minor courses, only one D is allowed.
Suggested Minors:
Business Administration (21 hours, may include 9 hours general ed courses)
Insurance (15 hours)
Economics (15 hours)
Management (18 hours)
Marketing (18 hours)
Supply Chain Logistics
For minor requirements, see www.business.msstate.edu/academics/minors

APPROVED SUBSTITUTIONS LIST FOR FOREST BUSINESS CONCENTRATION

Required Courses	Approved Substitutions
AEC 2713 Intro to Food & Resource Economics	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof Writing Ag, NR, Human Sci.	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR)(EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 1113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course.
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp ! (ACT English Sub-score of 16 or below)

FOMG

2022–2023 FORESTRY MAJOR
Forest Management Concentration (Sample Schedule)
Total Hours = 128

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro to Food and Res. Economics
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
EN 1103	English Comp I (ACT English subscore 17)	CO 1003	Fund. of Public Speaking
FO 1101	**Forest Resources Survey**	EN 1113	English Composition II (EN 1103)
MA 1313	College Algebra (ACT math subscore 19)		
SBP 1103	Intro to Sustainable Bioproducts		
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology** (BIO 1144 or 2113)	**FO 3103**	**Computer Appl. For. Resources**
FO 3113	Forest Recreation Mgt.	**FO 2213**	**Forest Measurements** (ST 2113)
	Physcial Science Elective (3)		Business/Science Elective (3)
PSS 3303	Soils (CH 1043)		Fine Arts Elective (3)
ST 2113	Intro. to Statistics (C in MA 1313, MA 1213, or ACT math subscore 24)		Humanities Elective (3)
Summer Field Program			
	FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)	
	FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)	
	FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)	
	WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)	
JUNIOR YEAR			
Fall Semester		Spring Semester	
AELC 3203	Prof. Writing in AG, NR & Human Sci (JR)(EN 1103, EN 1113)	**FO 4113**	**Forest Res. Econ.** (AEC 2713)
EPP 3124	Forest Pest Management	**FO 4213**	**Forest Biometrics** (ST 2113, FO 2213, or NREC 3213)
FO 4123	**Forest Ecology**	**FO 4223**	**Practice of Silviculture** (FO 4123)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)	**FO 4221**	**Practice of Silviculture Lab** (FO 4123)
	Humanities Elective (3)		Professional Elective (3)
			Business/Science Elective (3)
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	**FO 4413**	**Natural Res. Policy** (SR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4423**	**Prof. Practice** (FO 4323)
			Business/Science Elective (3)
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)		Free Elective (3)
	Professional Elective (3)		Professional Elective (3)

Forestry major required courses requiring a C or better or bolded.

FOMG

2022–2023 APPROVED ELECTIVE LIST
Forest Management Concentration

PROFESSIONAL ELECTIVES (CAN BE APPLIED AS BUSINESS/SCIENCE ELECTIVES)	
ABE 2873	Land Surveying (MA 1323)
BIO 3103	Genetics (MA 1313, BIO 1134, or BIO 2113)
BIO 3104	Ecology (BIO 1134)
BIO 4203	Taxon. of Spermatophytes (BIO 2113 & 2213)
BIO 4213	Plant Ecology
CFR 1101	Ambassador Lead Dev (up to 3hrs)
EPP 4154	General Entomology
EPP 4263	Prin. Insect Pest Mgt.
FO	ANY FO COURSE 3000 or higher*
GR 2313	Maps Remote
NREC	ANY NREC COURSE 3000 or higher*
SBP	ANY SBP COURSE 3000 or higher*
ST 4213	Nonparametric Methods (ST 2113)
WFA	ANY WFA COURSE 3000 or higher*
*CFR courses not otherwise specified on our curricula may be applied through the substitution process.	
HUMANITIES ELECTIVES (6 HOURS)	
ARC 2313/3313	History of Architecture
EN/FL 2123	Green and Latins Roots of English
EN 2203	Intro. to Literature (EN 1103, EN1113)
EN 2213/2223	English Literature (EN 1103, EN1113)
EN 2243/2253	American Literature I (EN 1103, EN1113)
EN 2273/2283	World Literature I (EN 1103, EN1113)
FL 1113/1123	Elem. Foreign Language[1]
HI 1063/1073	Early or Modern US History
HI 1163/1173	World History I or II
HI 1213/1223	Early or Modern Western World
HI 1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
PHI 1123	Intro. to Ethics
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II
[1]French, German, Greek, Japanese, Latin, Russian and Spanish	
PHYSICAL SCIENCE ELECTIVES (3)	
CH 1053	Survey of Chem II (CH 1043)
GR 1114	Physical Geography
PH 1113	General Physics (ACT Math Subscore 26 or MA 1323)

BUSINESS/SCIENCE ELECTIVES (UPPER LEVEL COURSES CAN BE APPLIED AS PROFESSIONAL ELECTIVES)	
ACC 2013†	Prin. Financial Accounting
ACC 2023†	Prin. Managerial Acc. (ACC 2013)
BIS 3233†	Mgt. Information Systems
BL 2413†	Legal Environ. Business
BQA 3123†	Bus. Stat. Meth. II (BQA 2113)
CH 1053	Survey of Chemistry II (CH 1043)
EC 2113†	Prin. Macroeconomics (SO)
EC 2123†	Prin. Microeconomics (EC 2113)
ENS 2103	Intro to Environ Sci
FIN 3123†	Fin. Mgt. (ACC 2013, EC 2123, BQA 2113)
GG 1113	Survey of Earth Science I
GR 4303	Prin of GIS
GG 4503	Geomorphology
GR 1114	Elements of Physical Geography
GR 3113	Conservation of Natural Resources
GR 4603	Climatology (GR 1114 or GR 1123)
INS 3103	Principles of Insurance (JR)
MGT 3113†	Prin. of Mgt. Prod. (JR)(EC 2113, BQA 2113)
MGT 3323	Entrepreneurship (EC 2123)
MGT 3513	Intro. Human Resource Mgt.
PH 1013	Physical Sci. Survey (MA 0103 or ACT math subscore 19)
PH 1063	Descriptive Astronomy
PHI 3013	Business Ethics
PSS 4313	Soil Fertility and Fertilizers (JR)(PSS 3303)
PSS 4323	Soil Classification (PSS 3303)
PSS 4333	Soil Conservation and Land Use (PSS 3303)
REF 3333	Principles of Real Estate (JR)
REF 3433	Real Property Evaluation (REF 3333)
†Courses can apply to the General Business Minor	
Courses accepted for the GIS minor may be applied as Professional or Business/Science Electives.	
FINE ARTS (3 HOURS)	
ARC 1013	Architectural Appreciation
ART 1013	Art History I
ART 1023	Art History II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	Hist. and Appr. of the Artcrafts
CO 1503	Intro. to Theater
LA 1803	Landscape Architecture Appr.
MU 1103/ AAS 1103	African American Music
MU 1113	History and Appr. of Music
PE 1323	History and Appr. of Dance
PSS 2343	Floral Design

SECTION III: DEPARTMENT OF FORESTRY

FOMG

APPROVED SUBSTITUTIONS LIST FOR FOREST MANAGEMENT CONCENTRATION	
Required Courses	Approved Substitutions
AEC 2713 Intr. Food & Resource Eco	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof Writing in Ag, NR & Human Sci	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR)(EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course
CO 1003 Fundamentals of Pubic Speaking	CO 1013 Introduction to Communication
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

2022–2023 FORESTRY MAJOR
Forest Products Concentration (Sample Schedule)
Total Hours = 128

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro to Food and Res. Economics
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
EN 1103	English Comp. I (ACT English subscore 17)	CH 1053	Survey of Chemistry II (CH 1043)
FO 1101	**Forest Resources Survey**	CO 1003	Public Speaking
MA 1613	Calc. for Bus. and Life Sc. (C in MA 1313 or ACT math subscore 24)	EN 1113	English Comp. II (EN 1103)
SBP 1103	Intro to Sustainable Bioproducts		
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology** (BIO 1144 or 2113)	**FO 3103**	**Computer Appl. For. Resources**
PH 1113	General Physics (MA 1323 or ACT math subscore 26)	**FO 2213**	**Forest Measurements** (ST 2113)
			Fine Arts Elective (3)
PSS 3303	Soils (CH 1043)		FP Processing Elective (3)
ST 2113	Intro to Statistics (C in MA 1313, MA 1213, or ACT math subscore 24)		FP Elective (3)
SBP 4013	Wood Anatomy (SBP 1103) (FL Even)		
Summer Field Program			
	FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)	
	FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)	
	FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)	
	WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)	
JUNIOR YEAR			
Fall Semester		Spring Semester	
EPP 3124	Forest Pest Management	AELC 3203	Prof. Writing in Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)
FO 4123	**Forest Ecology**	**FO 4113**	**Forest Res. Econ.** (AEC 2713)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)	**FO 4213**	**Forest Biometrics** (ST 2113, FO 2213, or NREC 3213)
	FP Elective (3)	**FO 4223**	**Practice of Silviculture** (FO 4123)
		FO 4221	**Practice of Silviculture Lab (FO 4123)**
		SBP 3113	Biomaterial Physics and Mechanics (MA 1323)
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	**FO 4413**	**Natural Res. Policy** (SR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4423**	**Prof. Practice** (FO 4323)
			FP Elective (3)
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)		Humanities Elective (3)
	FP Elective (3)		
	Humanities Elective (3)		

Forestry major required courses requiring a C or better or bolded.

2022–2023 APPROVED ELECTIVE LIST
Forest Products Concentration

FOREST PRODUCTS CONCENTRATION	
SBP 2012	Intro to Bioproduct Industry
SBP 2123	Mat Proc Sustain Bioprood (SBP 2012)
SBP 4123	Lumber Manufacturing (FL Even)
SBP 4144	Biocomposite Application and Manufacturing (SBP 2123, SBP 3113, SBP 3123, SBP 4113)
SBP 4253	Quantitative Methods in Sustainable Bioproducts (MA 1313, MA 1323, SBP 2123)
FOREST PRODUCTS ELECTIVES (12 HOURS)	
SBP 2012	Introduction to Bioproduct Industry
SBP 2123	Mat Proc Sustain Bioprod.
SBP 4023	Lignocellulosic Biomass Chemistry (CH1043 and CH 1053 or equivalent)
SBP 4113	Adhesives and Biocomposites (SBP 2123, SBP 3113, SBP 3123, CH 1053) (FL Odd)
SBP 4123	Deterioration and Reserv Biomat (SBP 1103) (FL Even) (Consent of Instructor)
SBP 4144	Biocomposite Application and Manufacturing (SBP 2123, SBP 3113, SBP 3123, SBP 4113)
SBP 4213	Deterioration and Preservation of Biomaterials (SBP 1103)
SBP 4253	Quantitative Methods in Sustainable Bioproducts (MA 1313, MA 1323, SBP 2123)
SBP 4333	Bioproducts and the Environment (SBP 4313)

FINE ARTS ELECTIVES (3 HOURS)	
ARC 1013	Architectural Appreciation
ART 1013	Art History I
ART 1023	Art History II
ART 2063	Global Contemporary Art
ART 2413	History and Appr. of the Artcrafts
CO 1503	Intro. to Theater
LA 1803	Landscape Architecture Appr.
MU 1103/ AAS 1103	African American Music
MU 1113	History and Appr. of Music
PE 1323	History and Appr. of Dance
PSS 2343	Floral Design
HUMANITIES ELECTIVES (6 HOURS)	
ARC 2313/3313	History of Architecture
EN 2203	Intro. to Literature (EN 1103, EN1113)
EN 2213/2223	English Literature (EN 1103, EN1113)
EN2243/2253	American Literature (EN 1103, EN1113)
EN2273/2283	World Literature (EN 1103, EN1113)
FL1113/1123	Elem. Foreign Language[1]
HI1063/1073	Early or Modern US History
HI1163/1173	World History I or II
HI1213/1223	Early or Modern Western World
HI1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
PHI 1123	Intro. to Ethics
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II

[1]French, German, Greek, Japanese, Latin, Russian, and Spanish

APPROVED SUBSTITUTIONS LIST FOR FOREST PRODUCTS CONCENTRATION

Required Courses	Approved Substitutions
AEC 2713 Intro to Food & Resource Economics	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof. Writing in Ag, NR & Human Sci.	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR)(EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 1113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course
CH 1053 Survey of Chemistry II	Any higher level chemistry course
CO 1003 Fundamentals of Pubic Speaking	CO 1013 Introduction to Communication
MA 1613 Business Calculus	MA 1713 Calculus (Act math subscore 26 or MA 1323 or MA 1453)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

SECTION III: DEPARTMENT OF FORESTRY

2022–2023 FORESTRY MAJOR
Urban Forestry Concentration (Sample Schedule)
Total Hours = 128

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro to Food and Res. Economics
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
	Humanities Elective (3)	EN 1113	English Comp. II (EN 1103)
EN 1103	English Comp. I (ACT English subscore 17)	PS 1113	American Government
FO 1101	**Forest Resources Survey**	CO 1003	Fund. of Public Speaking
MA 1313	College Algebra (ACT math subscore 19)		
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology** (BIO 1144 or 2113)	**FO 3103**	**Computer Appl. For. Resources and Lab**
PSS 2423	Plant Materials I	**FO 2213**	**Forest Measurements** (ST 2113)
ST 2113	Intro to Statistics (C in MA 1313, MA 1213, or ACT math subscore 24)	PSS 3303	Soils (CH 1043)
			Humanities (3)
	Fine Arts Elective (3)		Physical Science Elective (3)
Summer Field Program			
	FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)	
	FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)	
	FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)	
	WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)	
JUNIOR YEAR			
Fall Semester		Spring Semester	
AELC 3203	Prof Writing Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)	**FO 4113**	**Forest Res. Econ.** (AEC 2713)
		FO 4213	**Forest Biometrics** (ST 2113, FO 2213, or NREC 3213)
EPP 3124	Forest Pest Management	**FO 4223**	**Practice of Silviculture** (FO 4123)
FO 4123	**Forest Ecology**	**FO 4221**	**Practice of Silviculture Lab** (FO 4123)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)	REF 3333	Principles of Real Estate (JR)
LA 3623	Urban Planning	PSS 3473	Plant Material II (PSS 2423)
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 3113	Forest Recreation Mgt.	FO 4353	Natural Resource Law (JR)
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	**FO 4413**	**Natural Resource Policy** (SR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4423**	**Prof. Practice** (FO 4323)
		FO 4473	GIS Nat. Res. Mgt. (JR)
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)	FO 4683	Introduction to Urban and Community Forestry
PSS 4353	Arboriculture and Landscape Maintenance		

Forestry major required courses requiring a C or better or bolded.

2022–2023 APPROVED ELECTIVE LIST
Urban Forestry Concentration

FINE ARTS ELECTIVES (3 HOURS)		HUMANITIES ELECTIVES (6 HOURS)	
ARC 1013	Architectural Appreciation	ARC 2313/3313	History of Architecture
ART 1013	Art History I	EN/FL 2123	Greek and Latins Roots of English
ART 1023	Art History II	EN 2203	Intro. to Literature (EN 1103, EN 1113)
ART 2063	Global Contemporary Art	EN 2213/2223	English Literature (EN 1103, EN 1113)
ART 2413	History and Appreciation of the Artcrafts	EN 2243/2253	American Literature I (EN 1103, EN 1113)
CO 1503	Introduction to Theater	EN 2273/2283	World Literature I (EN 1103, EN 1113)
LA 1803	Landscape Architecture Appr.	FL 1113/1123	Elem. Foreign Language[1]
MU 1103/ AAS 1103	African American Music	HI 1063/1073	Early or Modern US History
		HI 1163/1173	World History I or II
MU 1113	History and Appr. of Music	HI 1213/1223	Early or Modern Western World
PE 1323	History and Appr. of Dance	HI 1313/1323	East Asian Civilizations I or II
PSS 2343	Floral Design	PHI 1103	Intro. to Philosophy
PHYSICAL SCIENCE ELECTIVES (3 HOURS)		PHI 1123	Intro. to Ethics
CH 1053	Survey of Chem II (CH 1043)	REL 1103	Intro. to Religion
GR 1114	Physical Geography	REL 3213	World Religions I
PH 1113	General Physics (ACT Math Subscore 26 or MA 1323)	REL 3223	World Religions II
		[1]French, German, Greek, Japanese, Latin, Russian, and Spanish	

APPROVED SUBSTITUTIONS LIST FOR URBAN FORESTRY CONCENTRATION

Required Courses	Approved Substitutions
AEC 2713 Intro to Food & Resource Economics	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof. Writing for Ag, NR & Human Sci.	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR) (EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 1113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course.
CO 1003 Fundamentals of Pubic Speaking	CO 1013 Introduction to Communication
FO 4473 GIS for Nat. Res. Management	FO 4453 Remote Sensing Applications (FO 4313 or GR 2313)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

SECTION III: DEPARTMENT OF FORESTRY

2022–2023 FORESTRY MAJOR
Wildlife Management Concentration (Sample Schedule)
Total Hours = 126

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro to Food and Res. Economics
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
EN 1103	English Comp. I (ACT English subscore 17)	EN 1113	English Comp. II (EN 1103)
FO 1101	**Forest Resources Survey**		Physical Science Elective (3)
MA 1313	College Algebra (ACT math subscore 19)	CO 1003	Fund. of Public Speaking
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology (BIO 1144 or 2113)**	FO 3213	Tree Physiology (BIO 1134, BIO 1144)*
PSS 3303	Soils (CH 1043)	**FO 3103**	**Computer Appl. For. Resources and Lab**
ST 2113	Intro. to Statistics (C in MA 1313, MA 1213 or ACT math subscore 24)	**FO 2213**	**Forest Measurements (ST 2113)**
			Fine Arts Elective (3)
WFA 3133	Applied Ecology (BIO 1134, BIO 1144)		Humanities Elective (3)
Summer Field Program			
		FO 3012	**Intro to Forest Communities** (PSS 3303, FO 2113)
		FO 3015	**Forest Description and Analysis** (FO 2213, ST 2113)
		FO 4231	**Introduction to Wood Supply Systems** (co-req FO 3015)
		WFA 3031	**Introduction to Wildlife and Fisheries Practices** (JR)
JUNIOR YEAR			
Fall Semester		Spring Semester	
AELC 3203	Prof. Writing for Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)	BIO 3524	Biology of Vertebrates
		FO 4113	**Forest Resource Economics** (AEC 2713)
EPP 3124	Forest Pest Management	**FO 4213**	**Forest Biometrics** (ST 2113, FO 2213, or NREC 3213)
FO 4123	**Forest Ecology**	**FO 4223/4221**	**Practice of Silviculture + Lab** (FO 4123)
FO 4233	**For. Op. and Harv.** (FO 3015, FO 4231)		
	Professional Elective (3)		
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4433	Mammalogy (BIO 1134 BIO 1144, and WFA 3133)	WFA 4443	Ornithology (BIO 1134, BIO 1144, and WFA 3133)
FO 4313	**Spatial Tech. in Nat. Res.** (FO 3015)	FO 4353	Natural Resource Law (JR)
FO 4323	**For. Res. Mgt.** (FO 4113, FO 4213, FO 4223, FO 4233)	**FO 4413**	**Natural Res. Policy** (SR)
		FO 4423	**Prof. Practice** (FO 4323)
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)	WFA 4243	Wildlife Techniques (JR)
	Humanities Elective (3)		

Forestry major required courses requiring a C or better or bolded.

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2022–2023 APPROVED ELECTIVE LIST
Wildlife Management Concentration

PROFESSIONAL ELECTIVES (3 HOURS)	
BIO 3103	Genetics I (MA 1313 or higher, BIO 1134 or higher or BIO 2113 or higher)
BIO 3304	General Microbiology (CH 1053 or CH 1223)
BIO 3504	Comparative Anatomy (BIO 1134 and BIO 1144)
CFR 1011	Amb Leadership Dev (up to 3 hours)
EPP 4154	General Entomology
FO	ANY FO COURSE 3000 or higher
GR 2313	Maps Remote
MGT 3513	Intro. Human Res. Mgt
NREC	ANY NREC COURSE 3000 or higher
SBP	ANY SBP COURSE 3000 or higher
ST 4213	Nonparametric Methods (ST 2113)
WFA	Any WFA COURSE 3000 or higher
CFR courses not otherwise specified on our curricula may be applied through the substitution process	

PHYSICAL SCIENCE ELECTIVE (3 HOURS)	
CH 1053	Survey of Chemistry II (CH 1043)
GR 1114	Physical Geography
PH 1113	General Physics I (MA 1323 or ACT math subscore 26)

FINE ARTS ELECTIVES (3 HOURS)	
ARC 1013	Architectural Appreciation
ART 1013	Art History I
ART 1023	Art History II
ART 2063	Global Contemporary Art
ART 2413	History and Appr. of the Artcrafts
CO 1503	Intro. to Theater
LA 1803	Landscape Architecture Appr.
MU 1103/ AAS 1103	African American Music
MU 1113	History and Appr. of Music
PE 1323	History and Appr. of Dance
PSS 2343	Floral Design

HUMANITIES ELECTIVES (6 HOURS)	
ARC 2313/3313	History of Architecture
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro. to Literature (EN 1103, EN 1113)
EN 2213/2223	English Literature (EN 1103, EN 1113)
EN 2243/2253	American Literature I (EN 1103, EN 1113)
EN 2273/2283	World Literature I (EN 1103, EN 1113)
FL 1113/1123	Elem. Foreign Language[1]
HI 1063/1073	Early or Modern US History
HI 1163/1173	World History I or II
HI 1213/1223	Early or Modern Western World
HI 1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
PHI 1123	Intro. to Ethics
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II
[1]French, German, Greek, Japanese, Latin, Russian and Spanish	

SECTION III: DEPARTMENT OF FORESTRY

WFMG

APPROVED SUBSTITUTIONS LIST FOR WILDLIFE MANAGEMENT CONCENTRATION	
Required Courses	Approved Substitutions
AEC 2713 Int to Food & Res Eco	EC 2113 Macroeconomics (SO) or EC 2123 Microeconomics (SO)(EC 2113)
AELC 3203 Prof. Writing Ag, NR & Human Sci.	EN 3313 Writ. for the Workplace (EN 1113), MGT 3213 Organ. Comm. (JR)(EN 1113), EDF 3413 Writing for Thinking (EN 1103, EN 1113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course.
CO 1003 Fundamentals of Pubic Speaking	CO 1013 Introduction to Communication
FO 3213 Tree Physiology	BIO 4214 General Plant Physiology (BIO 2113, CH1213), WFA 4223 Wildlife Plant ID (BIO 1134, BIO 1144, WPA 3133), or BIO 4203 Tax of Spermatophytes (BIO 2113, BIO 2213)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Subscore of 16 or below)

NRLA

2022–2023 NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION MAJOR
Natural Resource Law and Administration Concentration (Sample Schedule)
Total Hours = 124

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro Food Res Econ
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
EN 1103	English Comp. I (ACT English subscore 17)	GR 1114	Physical Geography
FO 1101	**Forest Resources Survey**	EN 1113	English Composition II (EN 1103)
MA 1313	College Algebra (ACT math subscore 19)	PHI 1113	Introduction to Logic
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology (BIO 1144 or 2113)**	CO 1003	Fund of Public Speaking
NREC 3113	**Forest Recreation Management**	**FO 3103**	**Computer Appl For Resources**
LA 1803	Landscape Arch Appreciation	BL 2413	Legal Environment of Business
PSS 3303	Soils (CH 1043)	GR 2313	Maps and Remote Sensing
PSS 3301	Soils Lab	NREC 3213	Environmental Measurements (ST 2113)
ST 2113	Intro to Statistics (C in MA 1313, MA 1213, or ACT math subscore of 24)		
JUNIOR YEAR			
Fall Semester		Spring Semester	
PS 3063	Constitutional Powers (JR)	**FO 4213**	**Forest Biometrics** (ST 2113, FO 2213 or NREC 3213)
AELC 3203	Prof. Writing Ag, NR & Human Sci (JR)(EN 1103, EN 1113)	PHI 1123	Intro to Ethics
		SO 1003	Introduction to Sociology
NREC 4313	**Spatial Tech Nat Res Mgmt** (GR 2313)		Professional Elective (3)
WFA 3133	Applied Ecology (BIO 1134, BIO 1144)		Humanities Elective (3)
	Free Elective (3)		
	Professional Elective (3)		
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4343	**Forest Admin and Organization (JR)**	**NREC 4353**	**Natural Resource Law (JR)**
	Free Elective (3)	**NREC 4413**	**Natural Resource Policy** (SR)
	Professional Elective (3)	**NREC 4423**	**Environmental Assessments** (SR)
	Professional Elective (3)		Professional Elective (3)
	Professional Elective (3)		Professional Elective (2)

NREC major required courses requiring a C or better or bolded.

2022–2023 APPROVED ELECTIVE LIST
Natural Resource Law and Administration Concentration

PROFESSIONAL ELECTIVES (20 HOURS)		PROFESSIONAL ELECTIVES (CONTINUED)	
ENS 2103	Intro Environ Sci	PS 4283	Public Opinion (JR)(PS1113)
AEC 3213	International Trade in Ag (AEC 2713 or EC 2123)	PS 4703	Prin Pub Adm (JR)(PS1113)
AEC 3233	Intro to Env Econ & Policy (AEC 2713 or EC 2123)	PS 4743	Environmental Policy (PS 1113, PS 2703)
AEC 4233	Environmental Economics (AEC 3233 and EC 3123)	REF 3333	Principles of Real Estate (JR)
AEC 4243	Natural Resource Econ (AEC 3233 and EC 3123)	REF 3433	Real Property Evaluation (REF 3333)
AEC 4413	Public Problems of Ag (SR, AEC 3113 and EC 3123)	REF 4333	Real Estate Law (BL 2413)
BIO 3104	Ecology	SBP	ANY SBP COURSE 3000 or higher
BL 4243	Entrepreneur Law	SO 4173	Environment-Society (AN 1103 or SO 1003)
BL 4263	Environmental Law	SO 4703	Population Problems (SO 1003)
CE 2803	Environ Engr Issues (C or better in CH 1223)	SO 4733	Comm: Org & Relation (JR)(SO 1003)
CO 1223	Intro Comm Theory	WFA	ANY WFA COURSE 3000 or higher
CO 4213	Political Commun	*CFR courses not otherwise specified may be applied through the substitution process	
CO 4223	Adv Comm Theory (CO 1223)		
CFR 1101	Ambassador Lead Dev. (up to 3hrs)	**HUMANITIES ELECTIVES (3 HOURS):**	
EC 4223	Labor Law & Empl Pol (3 hours of EC)	ARC2313/3313	History of Architecture
FO	ANY FO COURSE 3000 or higher	EN/FL 2123	Greek and Latins Roots of English
GR 3113	Conserv of Nat Res	EN 2203	Intro. to Literature (EN 1103, EN1113)
HI 4193	US Environmental History (any intro HI)	EN2213/2223	English Literature (EN 1103, EN1113)
LA 3623	Urban Planning	EN2243/2253	American Literature I (EN 1103, EN1113)
LA 4843	Sustainable Communities	EN2273/2283	World Literature I (EN 1103, EN1113)
MGT 3513	Intro Human Res Mgt	FL1113/1123	Elem. Foreign Language[1]
NREC	ANY NREC COURSE 3000 or higher	HI1063/1073	Early or Modern US History
PHI 3013	Business Ethics	HI1163/1173	World History I or II
PHI 3113	Philosophy of Law	HI1213/1223	Early or Modern Western World
PHI 3313	Environmental Ethics	HI1313/1323	East Asian Civilizations I or II
PHI 4143	Phil of Science	PHI 1103	Intro. to Philosophy
PS 2703	Intro Public Policy (PS 1113)	REL 1103	Intro. to Religion
PS 2713	Intro Engineer Pub Policy (EN 1113)	REL 3213	World Religions I
PS 3073	Civil Liberties (JR)	REL 3223	World Religions II
		[1]French, German, Greek, Japanese, Latin, Russian and Spanish	

APPROVED SUBSTITUTIONS LIST FOR NATURAL RESOURCE LAW AND ADMINISTRATION

Required Courses	Approved Substitutions
AEC 2713 Int to Food & Res Eco	EC 2123 Microeconomics (SO)(EC 2113 Macroeconomics)
AELC 3203 Prof. Writing Ag, NR & Human Sci.	MGT 3213 Organ. Comm. (JR)(EN 1113), BIO 3013 Prof. Writing for Biologists, EDF 3413 Writing for Thinking (EN 1103, EN 1113), EN 3313 Writing for the Workplace (EN 1113)
CH 1043 Survey of Chemistry I	Any higher level chemistry course.
CO 1003 Fund of Public Speaking	CO 1013 Intro to Communication
ST 2113 Introduction to Statistics	MA 2113 Intro to Stats or MA 3123 or ST 3123 Intro to Stats Inference (All require C in MA 1313 or ACT math subscore 24)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

NRT

2022–2023 NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION MAJOR
Natural Resource Technology Concentration (Sample Schedule)
Total Hours = 124

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	AEC 2713	Intro Food Res Econ
CH 1043	Survey of Chemistry I	BIO 1144	Biology II
EN 1103	English Composition I (ACT English subscore 17)	GR 1114	Physical Geography
FO 1101	**Forest Resources Survey**	EN 1113	English Composition II (EN 1103)
MA 1313	College Algebra (ACT math subscore 19)	MA 1323	Trigonometry (C in MA 1313 or ACT math subscore of 24)
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology (BIO 1144 or BIO 2113)**	CO 1003	Fund of Public Speaking
NREC 3113	**Forest Recreation Management**	**FO 3103**	**Computer Appl For Resources**
LA 1803	Landscape Arch Apprec	FO 2213	Forest Measurements (ST 2113)
PSS 3303	Soils (CH 1043)	GR 2313	Maps and Remote Sensing
PSS 3301	Soils Lab	NREC 3213	Environmental Measurements (ST 2113)
ST 2113	Intro to Statistics (C in MA 1313, MA 1213, or ACT math subscore of 24)		
JUNIOR YEAR			
Fall Semester		Spring Semester	
AELC 3203	Prof Writing Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)	**FO 4213**	**Forest Biometrics (ST 2113)**
NREC 4313	**Spatial Tech Nat Res Mgmt (GR 2313)**	FO 4453	Remote Sensing Appl
WFA 3133	**Applied Ecology (BIO 1134, BIO 1144)**	PH 1123	Intro to Ethics
	Humanities Elective (3)		Professional Elective (3)
	Professional Elective (4)	SO 1003	Introduction to Sociology
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4343	**Forest Admin and Organization (JR)**	**NREC 4353**	**Natural Resource Law (JR)**
	Free Elective (3)	**NREC 4413**	**Natural Resource Policy (SR)**
	Professional Elective (3)	**NREC 4423**	**Environmental Assessments (SR)**
	Professional Elective (3)	FO 4473	GIS Nat Res Mgmt (JR)
	Professional Elective (4)		Professional Elective (3)

NREC major required courses requiring a C or better or bolded.

2022–2023 APPROVED ELECTIVE LIST

Natural Resource Technology Concentration

PROFESSIONAL ELECTIVES (20 HOURS)	
ABE 2873	Land Surveying (MA 1323)
ABE 3513	GPS/GIS – AG & ENG (MA 1313 and 1323)
ABE 4263	Soil and Water Mgt (ABE 2873)
BIO 2503	Environmental Qual (any BIO course)
BIO 3104	Ecology (BIO 1134)
BIO 4203	Tax of Spermatophytes (BIO 2113 and BIO 2213)
BIO 4213	Plant Ecology
BIO 4233	Living with Global Change
BIO 4603	Ethnobotany (BIO 1134, BIO 1144)
CE 2213	Surveying (C or better in MA 1323)
CE 2803	Environ Engr Issues (C or better in CH 1223)
CFR 1101	Ambassador Lead Dev. (up to 3hrs)
ENS 2103	Intro Environ Sci
EPP 3124	Forest Pest Mgt
FO	ANY FO COURSE 3000 or higher*
GG 1111	Earth Science Lab
GG 1113	Survey Earth Sci I
GG 1121	Earth Science II Lab
GG 1123	Survey Earth Sci II
GG 3613	Water Resources
GR 2313	Maps Remote
GR 3113	Conserv of Nat Res
GR 3303	Survey Geospatial Tech (GR 2313)

*CFR courses not otherwise specified in our curricula may be applied through the substitution process.

Courses for a GIS minor may be used as professional electives.

PROFESSIONAL ELECTIVES (CONTINUED)	
GR 4303	Principles of GIS
GR 4313	Advanced GIS (GR 4303 or consent)
GR 4323	Cartographic Sciences (JR)
GR 4343	Adv Remote Sensing/Geosci (GR 4333 or ECE 4423 or FO 4453 or consent)
GR 4353	Geodatabase Design (GR 4303)
GR 4363	GIS Programming (GR 4303 or consent)
NREC	ANY NREC COURSE 3000 or higher
PHI 3313	Environmental Ethics
PSS 4483	Intro to Remote Sensing (SR)
REF 3333	Principles of Real Estate (JR)
SBP	ANY SBP COURSE 3000 or higher
ST 4213	Nonparametric Meth (introductory statistics)
WFA	ANY WFA COURSE 3000 or higher
HUMANITIES ELECTIVES (3 HOURS):	
ARC 2313/3313	History of Architecture
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro. to Literature (EN 1103, EN 1113)
EN 2213/2223	English Literature (EN 1103, EN 1113)
EN 2243/2253	American Literature I (EN 1103, EN 1113)
EN 2273/2283	World Literature I (EN 1103, EN 1113)
FL 1113/1123	Elem. Foreign Language[1]
HI 1063/1073	Early or Modern US History
HI 1163/1173	World History I or II
HI 1213/1223	Early or Modern Western World
HI 1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II

[1] French, German, Greek, Japanese, Latin, Russian and Spanish

APPROVED SUBSTITUTIONS LIST FOR NATURAL RESOURCE TECHNOLOGY CONCENTRATION

Required Courses	Approved Substitutions
AEC 2713 Int to Food & Res Eco	EC 2123 Microeconomics (SO), EC 2113 Macroeconomics (SO)
AELC 3203 Prof. Writing Ag, NR & Human Sci.	MGT 3213 Organ. Comm. (JR)(EN 1113), BIO 3013 Prof. Writing for Biologists, EDF 3413 Writing for Thinking (EN 1103, EN1113), EN 3313 Writing for the Workplace (EN 1113) (JR)
CH 1043 Survey of Chemistry I	Any higher level chemistry course
CO 1003 Fund of Public Speaking	CO 1013 Intro to Communication
ST 2113 Introduction to Statistics	MA 2113 Intro to Stats or MA 3123 or ST 3123 Intro to Stats Inference (All require C in MA 1313 or ACT math subscore 24)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

RCS

2022–2023 NATURAL RESOURCE AND ENVIRONMENTAL CONSERVATION MAJOR
Resource Conservation Science Concentration (Sample Schedule)
Total Hours = 124

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II
EN 1103	English Comp. I (ACT English subscore 17)	EN 1113	English Comp. II (EN 1103)
FO 1101	**Forest Resources Survey**	GR 1114	Physical Geography
AEC 2713	Intro Food Res Econ	SO 1003	Intro to Sociology
MA 1313	College Algebra (ACT math subscore 19)	MA 1613	Calc for Bus and Life Sci (C in MA 1313 or ACT math subscore 24)
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
CH 1213	Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1223	Chemistry II (C in CH 1213)
		CH 1221	Investigations in Chemistry II (C in CH 1211)
CH 1211	Investigations in Chemistry I	CO 1003	Fund of Public Speaking
NREC 3113	**Forest Recreation Management**	**FO 3103**	**Computer Appl For Resources**
ST 2113	Intro to Stat (C in MA 1313, MA 1213, or ACT math subscore 24)	GR 2313	Maps and Remote Sensing
		NREC 3213	Environmental Measurements (ST 2113)
LA 1803	Landscape Arch Apprec		
	Humanities Elective (3)		
JUNIOR YEAR			
Fall Semester		Spring Semester	
FO 2113	**Dendrology** (BIO 1144, or BIO 2113)	**FO 4213**	**Forest Biometrics** (ST 2113)
PSS 3303	Soils (CH 1213)	PHI 1123	Intro to Ethics
PSS 3301	Soils Lab	**NREC 4353**	**Natural Resource Law** (JR)
AELC 3203	Prof. Writing Ag, NR & Human Sci. (JR)(EN 1103, EN 1113)		Professional Elective (3)
			Emphasis Elective (3)
WFA 3133	**Applied Ecology** (Bio 1134, BIO 1144)		
	Emphasis Elective (3)		
SENIOR YEAR			
Fall Semester		Spring Semester	
FO 4343	**Forest Admin and Organization (JR)**	**NREC 4423**	**Environmental Assessments** (SR)
NREC 4313	**Spatial Tech. in Nat. Res.** (GR 2313)	**NREC 4413**	**Natural Resource Policy** (SR)
	Professional Elective (3)	NREC 4463	Forest Hydrology & Watershed Management (PSS 3303)
	Emphasis Elective (3)		Emphasis Elective (3)
	Emphasis Elective (3)		Free Elective (3)

NREC major required courses requiring a C or better or bolded.

2022–2023 APPROVED ELECTIVE LIST

Resource Conservation Science Concentration

PROFESSIONAL ELECTIVES (6 HOURS)	
BIO 3103	Genetics I (MA 1313, BIO 1134, or BIO 2113)
BIO 3104	Ecology (BIO 1134)
BIO 4233	Living with Global Change
CE 2803	Environ Engr Issues (C or better in CH 1223)
CFR 1101	Ambassador Lead Dev. (up to 3hrs)
CH 4513/4511	Org Chem I & Lab (CH 1221 and CH 1223.)
CH 4523/4521	Org Chem II & Lab (CH 4511 and CH 4513)
ENS 2103	Intro Environ Sci
FO	ANY FO COURSE 3000 OR HIGHER *
GR 3113	Conserv of Nat Res
GR 4603	Climatology (GR 1114 or GR 1123)
NREC	ANY NREC COURSE 3000 OR HIGHER*
NREC 4683	Intro Urban Community Forestry
PHI 3313	Environmental Ethics
SBP	ANY SBP COURSE 3000 OR HIGHER*
SBP 2012	Intro to Bioproduct Industry
ST 4213	Nonparametric Meth (ST 2113)
WFA	ANY WFA COURSE 3000 OR HIGHER *
*CFR courses not otherwise specified on our curricula may be applied through the substitution process.	
HUMANITIES ELECTIVES (3 HOURS)	
ARC 2313/3313	History of Architecture
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro. to Literature (EN 1103, EN 1113)
EN 2213/2223	English Literature (EN 1103, EN 1113)
EN 2243/2253	American Literature I (EN 1103, EN 1113)
EN 2273/2283	World Literature I (EN 1103, EN 1113)
FL 1113/1123	Elem. Foreign Language[1]
HI 1063/1073	Early or Modern US History
HI 1163/1173	World History I or II
HI 1213/1223	Early or Modern Western World
HI 1313/1323	East Asian Civilizations I or II
PHI 1103	Intro. to Philosophy
REL 1103	Intro. to Religion
REL 3213	World Religions I
REL 3223	World Religions II
[1]French, German, Greek, Japanese, Latin, Russian and Spanish	

RESOURCE CONSERVATION SCIENCE EMPHASIS ELECTIVES:	
ABE 4263	Soil and Water Mgt (ABE 2873)
BIO 2503	Enviornmental Qual
BIO 3103	Genetics 1
BIO 4224	Aquatic Botany (BIO 2203 and one of WFA 3133 or BIO 3104)
CE 2803	Environ Engr Issues
CE 3503/3501	Water Res Engr & Lab (C or better in CE 2803, credit or concurrent enrollment in EM 3313)
CE 3801	Env./Wtr. Res. Engr. 1 Lab
CE 3803	Enviro. / Wtr. Res. Engr 1
CE 3811	Env./Wtr. Engr. 11 Lab
CE 3813	Enviro./Wtr. Res. Engr. II
CH 4511	Org Chem Lab 1
CH 4513	Organic Chemistry 1
CH 4521	Org Chem Lab II
CH 4523	Organic Chemistry II
ENS 2103	Intro Environ Sci
FP 4313	Environ Principles
GG 4503	Geomorphology
GG 4613	Phys Hydrogeology
GG 4623	Chem Hydrogeology (GG 4613)
GR 4603	Climatology (GR 1114 or GR 1123)
NREC 4573	Ecology of Managed Forest
PSS 4603	Soil Chemistry (PSS 3303)
ST 4213	Nonparametic Meth
WFA 4221	Limnology Laboratory
WFA 4222	Limnology
WFA 4383	Wetlands Ecol & Mgt
WFA 4623	Conservation Biology
WFA 4633	Prob Solving Cons Bio

SECTION III: DEPARTMENT OF FORESTRY

RCS

APPROVED SUBSTITUTIONS LIST FOR RESOURCE CONSERVATION SCIENCE CONCENTRATION	
Required Courses	Approved Substitutions
AEC 2713 Int to Food & Res Eco	EC 2123 Microeconomics (SO), EC 2113 Macroeconomics (SO)
AELC 3203 Prof Writing Ag, NR, Human Sci.	MGT 3213 Organ. Comm. (JR)(EN 1113), BIO 3013 Prof. Writing for Biologists, EDF 3413 Writing for Thinking (EN 1103, EN 1113), EN 3313 Writing for the Workplace (EN 1113)(JR)
CO 1003 Fund of Public Speaking	CO 1013 Intro to Communication
NREC 4463 Forest Hydro & Watershed Mgt.	FO 4483 Forest Soils (PSS 3303, FO 3012, FO 4123)
ST 2113 Introduction to Statistics	MA 2113 Intro to Stats or MA 3123 or ST 3123 Intro to Stats Inference (All require C in MA 1313 or ACT math subscore 24)
MA 1613 Calculus for Business and Life Science	MA 1713 Calculus I (ACT Math Subscore 26 or C or higher in MA 1323 or MA 1453)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Subscore of 16 or below)

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE (WFA)
Dr. Andrew Kouba, Department Head - Thompson Hall Annex 205
Dr. Leslie Burger, Undergraduate Coordinator - 259 Thompson Hall

WILDLIFE, FISHERIES AND AQUACULTURE MAJOR

The Department of Wildlife, Fisheries and Aquaculture's mission is to promote the wise stewardship and management of our natural resources by advancing fisheries, wildlife and aquaculture science, extending that knowledge to end-users, and training the next generation of professionals. Working to accomplish that mission are department faculty including wildlife scientists, wildlife extension specialists, fisheries scientists, fisheries extension specialists, aquaculture scientists, aquaculture extension specialists, and federal wildlife and fisheries scientists in the Fish and Wildlife Cooperative Research Unit. The Department also has close ties with the USDA APHIS Wildlife Services, US Fish and Wildlife Services, and the Mississippi Department of Wildlife, Fisheries, and Parks. WFA courses reflect diverse conservation discipline areas and prepare students to be future professionals. Student may select courses that lead to certification as biologists by The Wildlife Society, the American Fisheries Society, the Ecological Society of America, and federal wildlife agencies.

In addition to successfully completing an academic pathway, future employment opportunities will be predicated on professional experience. Students in this degree program are strongly advised to seek wildlife- and fisheries-related experiences during their undergraduate programs, including summer technician or internship positions, or part-time, in-semester positions.

PROFESSIONAL EXPECTATIONS OF WILDLIFE, FISHERIES, AND AQUACULTURE STUDENTS

Natural resource conservation and management is a profession, and individuals training within this vocation are expected to conduct themselves as professionals, beginning with their education. Behaviors and habits developed now will carry over and affect career progress. Natural resources conservation and management is more than animals and plants; working with people is an important element of a successful career. Respecting others, being aware of your behavior, and conveying a positive impression is crucial to students' professional development and society's view of the profession. Your demeanor and actions reflect on you, Mississippi State University, the College of Forest Resources, the Department of Wildlife, Fisheries and Aquaculture, the faculty, the student body, our alumni, and the profession as a whole. Therefore, you should conduct yourself appropriately regarding to conduct, appearance, and respect for others. The Department of Wildlife, Fisheries and Aquaculture has collectively agreed on a set of expectations and consequences for students relative to behavior and habits to apply in classes and during transportation and laboratories, which include trips to private property, professional meetings, federal and state forests, refuges, field and industrial operations, and field sites.

WILDLIFE, FISHERIES AND AQUACULTURE CONCENTRATIONS

Students must complete a specified major core curriculum in one of six academic pathways:

1. Conservation Biology
2. Conservation Law Enforcement
3. Human-Wildlife Interactions
4. Wildlife Agriculture Conservation
5. Wildlife, Fisheries, and Aquaculture Science
6. Wildlife Veterinary Medicine (Pre-Vet Program)

Conservation Biology — This curriculum provides undergraduate students with a comprehensive background necessary for careers in conservation biology. Students will be equipped to address population ecology, imperiled and at-risk species, global threats to biodiversity, preservation of naturally-occurring wildlife and habitat, conservation of wildlife outside their natural habitat (zoos and preserves), conservation planning, and the social and cultural elements of conservation. This concentration is intended for serious, academically strong students.

Conservation Law Enforcement — This program is for students who seek employment following receipt of a B.S. degree in positions related to natural resource law enforcement positions (such as Conservation Officers, Park Rangers, Wildlife Inspectors). Continuation on to graduate school in human dimensions, conservation law enforcement, or wildlife biology is possible.

Human-Wildlife Interactions — This curriculum provides the educational background for those students wishing to pursue a career as wildlife biologists who work to address issues related to human populations and wildlife. Students completing this concentration may seek employment immediately following graduation but are equally prepared to pursue graduate degrees in human dimensions, conservation education, or other areas of wildlife science.

Wildlife Agriculture Conservation — This curriculum provides the educational background for students pursuing careers as wildlife biologists or conservationists in agricultural areas which requires a strong background in both wildlife biology and agricultural

science. Successful graduates of this program will meet minimum education requirements for wildlife biologists and NRCS conservation positions. Students completing this concentration may seek employment immediately following graduation. Students will be prepared to pursue graduate degrees in wildlife biology and related natural resource fields

Wildlife, Fisheries, and Aquaculture Science — This concentration provides a solid foundation in natural resource science and management, as well as the flexibility to meet desired and unique career goals of students. Employment with this concentration after the B.S. is earned is possible, but competition is intense. This degree is intended for academically strong students who can maintain a 3.00 or higher GPA, which is the minimum GPA required for admittance into graduate programs. Students will be well-prepared to pursue graduate degree in wildlife and related natural resource fields.

Wildlife Veterinary Medicine — Integration of wildlife science and management and veterinary medicine has become important with current diverse uses of wildlife. As wildlife habitats dwindle and animal populations become more compressed, attention towards disease diagnosis and abatement must increase. Students that decide to complete their B.S. degree before applying to a veterinary college or students that decide to pursue other Wildlife, Fisheries and Aquaculture career paths, but are interested in having a strong background in basic veterinary medicine should pursue this concentration. This four year program will provide the foundation to pursue graduate studies that require a strong background in veterinary and related sciences.

WILDLIFE, FISHERIES AND AQUACULTURE ACADEMIC POLICIES AND PROGRAMS

WFA Major Core Courses

Grades of C or better are required in WFA major core courses. The following are core courses in the WFA major: WFA 1102, WFA 3133, WFA 4153, WFA 4223, WFA 4243, WFA 4353 and WFA 4473. (Note: Pre-vet majors must earn grades of C or higher on all coursework required for Vet School.)

Professional Experience and Internships

The required course work is designed to ensure that students are well-prepared to effectively compete within the job market or for graduate school. Additionally, the laboratories of many required courses provide students with experience important in natural resources management. However, it is critical that students have the opportunity to more actively participate in career activities above and beyond what the coursework provides.

Professional experience through field technician positions or internships provides students with the opportunity to: work with prospective employers to obtain "hands-on" experience; get to know wildlife and/or fisheries professionals outside of the University; and verify their career decision is the right choice. Experiences totalling at least 135 hours can be applied as a professional elective to the WFA major with prior approval; only 3 hours (one internship) may be applied.

A student must apply for internship credit prior to the start date of the internship/experience. The approval process requires signatures from the advisor, the department's undergraduate program coordinator, and the department head.

Biology Minor

Students pursuing the WLVM concentration should declare the Biology minor as all courses needed to satisfy the Biology minor are required. Other WFA students are encouraged to review the Biology Minor requirements located in the General Information section of this handbook and participate as interested.

Directed Individual Study Courses

Directed Individual Study (DIS) courses can be applied to the WFA major with prior approval. The approval process requires the signatures of the student, the instructor, the student's advisor, the WFA undergraduate coordinator, and the department head(s) of the instructor and the student. The course's title, justification, description, and applicability must be provided. Once approved, the DIS Form must be on file in the CFR Office of Student Services. DIS courses may not be used as substitutions for WFA core courses. Only two distinctly-difference DIS classes (total of six hours) may be applied to the degree program (with limited exceptions, DIS classes will not apply to the WLVM concentration.)

University of Southern Mississippi - Gulf Coast Research Laboratory Summer Field Program

Students may take courses in marine biology at the University of Southern Mississippi's (USM) Gulf Coast Research Laboratory to satisfy professional electives and/or other course requirements. Visit www.usm.edu/gcrl for more information on summer course offerings. Substitution approval by the department is required prior to enrollment in the USM Summer Field Program. See your advisor or the Department's Undergraduate Coordinator for details.

Student Leadership Recognition Program

The Student Leadership Recognition Program was started in the Forestry Department with the purpose of introducing undergraduate and graduate students to all activities offered by the Department, the College of Forest Resources (CFR), and beyond to stimulate them to voluntarily participate in diverse activities, and to recognize the importance of participating. The program is now college-wide and Wildlife, Fisheries and Aquaculture and Sustainable Bioproducts majors may participate.

Beyond gaining educational and social benefits, students will become more engaged in activities whereby they can network with faculty, their fellow students, and those in the greater natural resources community. This recognition of being a student leader and one who is active in extracurricular activities would also be a worthy addition to student resumes.

Interested students should see Dr. Stephen C. Grado, Room 357 Thompson Hall, 662.325.2792.

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

WILDLIFE, FISHERIES AND AQUACULTURE CURRICULA

Acronyms used for Department of Wildlife, Fisheries and Aquaculture Concentrations	
CONB	Conservation Biology
CLE	Conservation Law Enforcement
HWI	Human-Wildlife Interactions
WLAC	Wildlife Agriculture Conservation
WLFS	Wildlife, Fisheries, and Aquaculture Science
WLVM	Wildlife Veterinary Medicine (Pre-Vet program)

An example curriculum for each of these concentrations follows. The example curricula should be followed by those students entering MSU as freshmen or transferring during the Fall 2020, Spring 2021, or Summer 2021 semesters and by those students changing majors into the WFA major from another major on campus.

Prerequisites and/or student class standing requirement are shown in parentheses. (FR=Freshman, SO=Sophomore, JR = Junior, SR = Senior)

Approved substitutions for each concentration are listed on the corresponding concentrations' electives list page. Approved substitutions do not require processing a substitution form.

The semester courses that are not taught every semester show offering time in parentheses (FL=Fall, SP=Spring).

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Conservation Biology Concentration (Sample Schedule)
Total Hours = 124 (effective Summer 2019)

BIO 1134	Biology I	BIO 1144	Biology II
CH 1213	Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1223	Chemistry II (C or better in CH 1213)
CH 1211	Investigations in Chemistry I	CH 1221	Investigations in Chemistry II
EN 1103	English Comp. I (ACT subscore 17)	EN 1113	English Composition II (EN 1103)
WFA 1102	**Wildlife and Fisheries Profession** (FR, SO) (FL)	MA 1613	Calculus for Business and Life Sciences
			Oral Communication Elective (3)
	Humanities Elective (3)		

SOPHOMORE YEAR

WFA 3133	**Applied Ecology** (BIO 1134 & 1144)	**WFA 4243**	**Wildlife & Fisheries Techniques** (SO)
BIO 3103	Genetics (MA 1313, BIO 1134)	CH 2503	Elementary Organic Chemistry (CH 1213)
	Statistics Elective (3)		Aquatics Elective (3)
FO 2113	**Dendrology (BIO 1144)**		Humanities Elective (3)
	WFA Social Science Elective (3)		Computer Applications Elective (3)

Students are encouraged to obtain Wildlife, Fisheries or Conservation Biology experience during the summer. Internship credit for professional experience may apply toward professional elective hours.

JUNIOR YEAR

Fall Semester		Spring Semester	
WFA 4123	Wildlife & Fish Biometrics (Stats, C or better in MA 1613)	**WFA 4153**	**Principles Wildlife Cons. & Mgt.** (WFA 3133)
WFA 4623	Conservation Biology (FL)	WFA 4623	Problem Solving in Conservation Biology (WFA 4623) (SP)
	Professional Elective (3)		
	Social Science Elective (3)	BIO 4113	Evolution (MA 1313, BIO 1134, BIO 1144, BIO 3103)
	Fine Arts Elective (3)		Nat Res Policy Elective (3)
			Writing Elective (3)

SUMMER SEMESTER

Students are encouraged to obtain Wildlife, Fisheries or Conservation Biology experience during the summer. Internship credit for professional experience may apply toward professional elective hours.

SENIOR YEAR

Fall Semester		Spring Semester	
WFA 4353	**Fish and Wild. Policy & Law** (SR)(FL)	WFA 4253	Applications of GIS in Wildlife Sciences (SR) (SP)
WFA 4881	Current Topics in Conservation Biology (WFA 3133, WFA 4623) (FL)	**WFA 4473**	**WL & Fish Practices** (SR) (WFA 3133, WFA 4153) (should be taken in last semester)
WFA 4223	Wildlife Plant ID (BIO 1134, BIO 1144 & WFA 3133) (FL)		Organismal Elective (3)
	Organismal Elective (3)		Professional Elective (3)
	Professional Elective (3)		Professional Elective (3)
	Professional Elective (3)		

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing

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2022–2023 APPROVED ELECTIVE LIST
Conservation Biology Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SOPH standing)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313)
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR) (EN 1103, EN 1113)
BCH 4503	Sci Comm Skills (JR)
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)
COMPUTER APPLICATION ELECTIVES	
AEC 1223	Computer Applications for Ag & Life Sciences
CSE 1013	CSE AP Credit
FO 3103	Computer Applications in Forest Resources
GR 2313	Maps & Remote Sensing
GR 3303	Survey of Geospatial Tech (GR 2313)
TECH 1273	Computer Applications
TKB 2123	Intro to Database Mgt (TKT 1273 or BIS 1012)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Green and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
NATURAL RESOURCE POLICY ELECTIVES	
WFA 4363	W&F Admin and Comm (JR)
WFA 4463	Human Dim of F&W Mgt (JR)
FO 4343	Forest Admin & Org (JR)
FO 4353	Natural Resource Law (JR)
FO 4413	Natural Resource Policy (SR)
PS 4743	Environmental Policy (PS 1113, PS 2703)
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
PLANT ELECTIVES	
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
FO 2113	Dendrology

2022–2023 APPROVED ELECTIVE LIST
Conservation Biology Concentration

WFA SOCIAL SCIENCE ELECTIVES	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Intro to Food & Resource Econ
AN 1143	Cultural Anthropology
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EC 4043	Survey of Economics (SR)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
PS 1113	American Government
PS 1313	Intro to International Relations
SO 1003	Intro to Sociology

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families

CONSERVATION BIOLOGY PROFESSIONAL ELECTIVES	
WFA 4113	Animal Behavior
WFA 4263	Wildlife Diseases
WFA 4273	Management Human-Wildlife Interactions
WFA 4313	Fisheries Management (WFA 3133)
WFA 4373	Conservation in Ag Landscapes
WFA 4383	Wetlands Ecology
WFA 4393	Urban Wildlife Ecology (C or better in WFA 3133, JR standing)
WFA 4394	Waterfowl Ecol & Mgt (C or better in WFA 3133, JR standing)
WFA 4463	Human Dimensions WF Management
WFA 4483	Seminar in Tropical Ecology
WFA 4484	Upland Avian Ecology and Management
AN 3163	Maritime and Fishing People
AN 3333	Primate Behavior
AN/SO 4173	Environment and Society
BCH 4013	Principles of Biochemistry
BIO 2503	Environmental Quality
BIO 3303	Parasitology (BIO1134)
BIO 3304	General Microbiology (CH 1053 or CH 1223)
BIO 4123	Behavioral Ecology (MA 1313, BIO 1134, BIO 1144, BIO 3103, BIO 4133)
BIO 4143	Population Genetics (BIO 2113)
BIO 4213	Plant Ecology
BIO 4233	Living with Global Change
BIO 4603	Ethnobotany
BIO 4703	Avian Diversity (BIO 1134, BIO 1144)
BIO 4993	Community Ecology (JR)
GG 3613	Water Resources
GG 4523	Coast Environments
NREC 3213	Environmental Measurements (ST 2113)
NREC 4423	Environmental Assessments
PS 4743	Environmental Policy (PS 1013)
SO 4703	Population Problems (SO 1003)
Con Bio Organismal Elective with Approval	

CONSERVATION BIOLOGY ORGANISMAL ELECTIVES	
WFA 4423	Herpetology (WFA 3133)
WFA 4433	Mammalogy (WFA 3133)
WFA 4443	Ornithology (WFA 3133)
WFA 4453	Ichthyology (WFA 3133)
BIO 2513	Animal Diversity (BIO 1134, BIO 1144)
BIO 3524	Biology of Vertebrates
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
EPP 4154	Entomology

AQUATICS ELECTIVES	
WFA 4133	Fisheries Science (ST 3123)
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4233	Limnology (WFA 3133)
WFA 4313	Fisheries Mgt (WFA 3133)
WFA 4383	Wetlands Ecology (JR)(WFA 3133)
WFA 4453	Ichthyology (WFA 3133)
CVM 4134	Aquatic Animal Health (any microbiology, any physiology)
GG 3613	Water Resources
GG 4523	Coast Environments
BIO 4224	Aquatic Biology (BIO 2113, WFA 3133)

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CONB

APPROVED SUBSTITUTIONS LIST FOR CONSERVATION BIOLOGY CONCENTRATION	
Required Courses	Approved Substitution
CH 2503 Elementary Organic Chemistry	CH 4513 Organic Chemistry (C in CH1223)
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
WFA 4253 Appl of GIS in WF	FO 4313 Spatial Tech in Nat. Res. Mgt. (FO 3015 or GR 2313) FO 4473 GIS Nat Res. Mgt. GR 2313 Maps and Remote Sensing GR 3303 Survey of Geospatial Tech (GR 2313) GR 4303 Principles of GIS
BIO 3103 Genetics	BIO 4143 Population Genetics (BIO 1134, BIO 1144)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

CLE

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Conservation Law Enforcement Concentration (Sample Schedule)
Total Hours = 124 (effective Fall 2017)

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II (C or better in BIO 1134)
CH 1043/1213	Survey of Chemistry I or Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1053/1223	Survey of Chemistry II (CH 1043) or Chemistry II (CH 1213)
EN 1103	English Comp. I (ACT subscore 17)	EN 1113	English Composition II (EN 1103)
SO 1003	Intro. to Sociology		Oral Communication Elective (3)
WFA 1102	**Wildlife and Fisheries Profession** (FR, SO, or instructor consent) (FL)	PSY 1013	General Psychology
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
WFA 4243	**Wildlife Techniques (SO)**	**WFA 3133**	**Applied Ecology (BIO 1134 & 1144)**
CRM 1003	Crime and Justice in America	PHI 1123	Intro to Ethics (3)
MA 1313/1613	College Algebra or Calculus for Business and Life Sciences	CRM 3313	Deviant Behavior
			CLE Elective (3)
	Plant Elective (3)		Humanities Elective (3)
	Fine Arts Elective (3)		
JUNIOR YEAR			
Fall Semester		Spring Semester	
WFA 4153	**Principles of Wildlife Conservation and Management** (SO)(WFA 3133 or FO 4123)	BIO 3524	Biology of Vertebrates (SP)
			Statistics Elective (3)
	CLE Elective (3)		Natural Resources Management Elective (3)
	Writing Elective (3)		Natural Resources Management Elective (4)
	Aquatics Elective (3)		CLE Elective (3)
	Computer Application Elective (3)		
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4223	**Wildlife Plant ID** (BIO 1134 & BIO 1144 & WFA 3133) (FL)	**WFA 4473**	**Wildlife & Fisheries Practices** (SR)(WFA 3133 & WFA 4153) (Should be taken in last semester)
WFA 4353	**Fish and Wild. Policy & Law** (SR)(FL)		Natural Resources Policy Elective (3)
	Natural Resources Management Elective (3)		CLE Elective (3)
	Natural Resources Management Elective (4)		CLE Elective (3)
	CLE Elective (3)		Natural Resources Management Elective (3)

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing

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2022–2023 APPROVED ELECTIVE LIST WILDLIFE, FISHERIES AND AQUACULTURE
Conservation Law Enforcement Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SOPH standing)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313)
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR) (EN 1103, EN 1113)
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)
PLANT ELECTIVES	
BIO 2113	Plant Biology (BIO 1134)
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
FO 2113	Dendrology (BIO 1144 or BIO 2113)
PSS 3133	Intro Weed Science (BIO 2113; CH 1213 or CH 1053)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Green and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
REL 1103	Intro to Religion
REL 3213	World Religions I
REL 3223	World Religions II
NATURAL RESOURCE POLICY ELECTIVES	
FO 4343	Forest Admin & Org (JR)
FO 4353	Natural Resource Law (JR)
FO 4413	Natural Resource Policy (SR)
PS 4743	Environmental Policy (PS 1113, PS 2703)
WFA 4363	W&F Admin and Comm (JR)
WFA 4463	Human Dim of F&W Mgt (JR)
COMPUTER APPLICATION ELECTIVES	
AEC 1223	Computer Applications for Ag & Life Sciences
CSE 1013	CSE AP Credit
FO 3103	Computer Applications in Forest Resources
GR 2313	Maps & Remote Sensing
GR 3303	Survey of Geospatial Tech (GR 2313)
TECH 1273	Computer Applications
TKB 2123	Intro to Database Mgt (TKT 1273 or BIS 1012)
WFA 4123	Wildlife and Fisheries Biometrics (ST 3123, C or better in MA 1613)
WFA 4253	App of GIS in WF (SR)

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2022–2023 APPROVED ELECTIVE LIST WILDLIFE, FISHERIES AND AQUACULTURE
Conservation Law Enforcement Concentration

NATURAL RESOURCES MANAGEMENT ELECTIVES	
AEC 2713	Intro to Food & Resource Economics or EC 2113 Prin of Macroeconomics (SO) or EC 2123 Prin of Microeconomics (SO)
BIO 2503	Environmental Quality (1 BIO course)
BIO 4143	Population Genetic (BIO 1134, BIO 1144)
CH 1051	Exp Chemistry
EPP 4154	General Entomology
EPP 4244	Aquatic Entomology (EPP 4154)
FO 3113	Forest Recreation Management
FO 3203	Forest Fire
FO 4453	Remote Sensing App
GR 2313	Maps and Remote Sensing
GR 3113	Conservation of Natural Resources
GR 3303	Survey of Geospatial Technologies (GR 2313)
GR 4303	Principles of GIS
GR 4313	Advanced GIS (GR 4303)
GR 4333	Remote Sensing Phys Env (GR 3303)
PSS 3303	Soils (CH 1043)
PSS 3301	Soils Lab (co-req: PSS 3303)
PSS 4333	Soil Cons & Land Use (PSS 3303)
Any Upper-Level WFA Course	
AQUATICS ELECTIVES	
BIO 4224	Aquatic Biology (BIO 2713, WFA 3133)
CVM 4134	Aquatic Animal Health (any microbiology, any physiology)
GG 3613	Water Resources
GG 4523	Coast Environments
WFA 4133	Fisheries Science (ST 3123)
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4233	Limnology (WFA 3133)
WFA 4313	Fisheries Mgt (WFA 3133)
WFA 4383	Wetlands Ecology (JR)(WFA 3133)
WFA 4453	Ichthyology (WFA 3133)

CLE ELECTIVES (MSU CORE)	
ACC 2013	Prin of Financial Accounting
AN 3163	Maritime & Fishing Peoples
AS 2523	Military Leadership
BCH 2013	Intro to Forensic Science (BIO 1134, BIO 1144)
BL 2413	Legal Environment of Business
CO 3803	Prin of Public Relations
CRM 2003	Crime, Justice and Inequality (CRM 1003, SO 1003)
CRM/SO 3103	Contemp Issues CJ (CRM 1003, SO 1003)
CRM/SO 3113	Comm Crime Prev & Policy (CRM 1003, SO 1003)
CRM/SO 3123	Policing in Society (CRM 1003, SO 1003)
CRM/SO 3343	Gender, Crime and Justice (CRM 1003, SO 1003)
CRM/SO 3503	Violence in the U.S. (CRM 1003, SO 1003)
CRM/SO 3353	Race Crime and Justice (CRM 1003, SO 1003)
CRM/SO 3363	Globalization and Crime (CRM 1003, SO 1003)
CRM/SO 3603	Criminological Theory (CRM 1003, SO 1003)
CRM/SO 4233	Juvenile Delinquency (CRM 1003, SO 1003)
CRM/SO 4523	Law and Society (CRM 1003, SO 1003)
EPP 4313	Forensic Entomology
FL 1113-2143	Foreign Language I-IV
FO 4353	Natural Resources Law (JR)
GR 4203	Geography of N. America
GR 4263	Geography of the South
MS 2523	Military Leadership
PS 2703	Intro to Public Policy (PS 1113)
PS 4743	Environmental Policy (PS 1113, PS 2703)
PSY 3623	Social Psychology (PSY 1013)
PSY 4353	Psychology and the Law (JR)(PSY 1013)
PSY 4373	Forensic Psychology (JR)(PSY 1013)
SO 2203	Cultural and Racial Minorities (SO 1003)
SO 3003	Social Inequality (SO 1003)
SO 3213	Introduction to Social Research (9 hours SO/CRM courses)
SO 4173	Environment and Society (AN 1103 or SO 1003)

APPROVED SUBSTITUTIONS LIST FOR CONSERVATION LAW ENFORCEMENT CONCENTRATION

Required Courses	Approved Substitution
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Subscore of 16 or below)

HWI

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Human-Wildlife Interactions Concentration (Sample Schedule)
Total Hours = 124 (effective Fall 2019)

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II
CH 1043/1213	Survey of Chemistry I or Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1053/1223	Survey of Chemistry II (CH 1043) or Chemistry II (C or better in CH 1213)
	Humanities Elective (3)	EN 1113	English Composition II (EN 1103)
EN 1103	English Comp. I (ACT subscore 17)	MA 1613	Calc. for Bus. and Life Sci. (C in MA 1313 or ACT math subscore 24)
WFA 1102	**Wildlife and Fisheries Profession** (FR, SO, or instructor consent)(FL)		
			Oral Communication Elective (3)
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
WFA 3133	**Applied Ecology** (BIO 1134 & 1144)	**WFA 4243**	**Wildlife Techniques** (SO)
PSS 3303	Soils (CH 1043)		Life Science Elective (3)
PSS 3301	Soils Lab (CH 1043)		Fine Arts Elective (3)
	Plant Elective (3)		Humanities Elective (3)
	Statistics Elective (3)		Social Science Elective (3)
	WFA Social Science (3)		
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
JUNIOR YEAR			
Fall Semester		Spring Semester	
WFA 4153	**Prin. Wildlife Conservation & Mgt.** (SO)(WFA 3133 or FO 4123)	WFA 4513	Current Topics in Human-Wildlife Interactions I (JR)(WFA 3133) (Sp Odd)
WFA 4273	Eco. & Mgt. of Human-Wildlife Conflicts (WFA 3133) (FL Odd)	WFA 4123	WF Biometrics (ST 3123 & C in MA 1613)
WFA 4283	Human-Wildlife Conflicts Techniques (WFA 3133) (FL Odd)		Writing Elective (3)
	Wildlife Biology Elective		Natural Resources Policy Elective (3)
	Computer Application Elective (3)		Zoology Elective (4)
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4223	**Wildlife Plant ID** (BIO 1134 & BIO 1144 & WFA 3133) (FL)	**WFA 4473**	**Wildlife & Fisheries Prac.** (SR)(WFA 3133 & WFA 4153)(should be taken in last semester)
WFA 4353	**Fish and Wildlife Policy and Law Enforcement** (SR)(FL)		Aquatics Elective (3)
	Life Science Elective (4)		Wildlife Biology Elective (3)
	HWI Professional Elective (3)		HWI Professional Elective (3)
	HWI Professional Elective (3)		HWI Professional Electives (3)

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

2022–2023 APPROVED ELECTIVE LIST
Human-Wildlife Interactions Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2413	His & Appr of the Artcrafts
ART 2063	Global Contemporary Art
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SOPH standing)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313) (recommended)
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR)(EN 1103, EN 1113)
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)
PLANT ELECTIVES	
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
FO 2113	Dendrology (BIO 1144 or BIO 2113)
PSS 3133	Intro Weed Science (BIO 2113; CH 1213 or CH 1053)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Green and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
HI 1323	East Asian Civ II
HI 4683	Europe: WWI to Hitler (one HI course)
HON 1163	The Quest Begins
HON 3183	Hon Sem in the Hum (SO)(EN 1103, EN 1113)
PHI 1103	Intro to Philosophy
PHI 1113	Intro to Logic
PHI 1123	Intro to Ethics
PHI 3023	History of Western Philosophy I
PHI 3033	History of Western Philosophy II
PHI 3153	Aesthetics
REL 1103	Intro to Religion
REL 3213	World Religions I
REL 3223	World Religions II

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2022–2023 APPROVED ELECTIVE LIST
Human-Wildlife Interactions Concentration

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Cultural Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families
WFA SOCIAL SCIENCE ELECTIVES	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Intro to Food & Resource Econ
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EC 4043	Survey of Economics (SR)
GR 2013	Human Geography
PS 1113	American Government
PS 1313	Intro to International Relations
SO 1003	Intro to Sociology

WILDLIFE BIOLOGY ELECTIVES	
WFA 4423	Herpetology (WFA 3133)
WFA 4433	Mammalogy (WFA 3133)
WFA 4443	Ornithology (WFA 3133)
AQUATICS ELECTIVES	
WFA 4133	Fisheries Science (ST 3123)
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4233	Limnology (WFA 3133)
WFA 4313	Fisheries Mgt (WFA 3133)
WFA 4383	Wetlands Ecology (JR)(WFA 3133)
WFA 4453	Ichthyology (WFA 3133)
BIO 4224	Aquatic Biology (BIO 2113, WFA 3133)
CVM 4134	Aquatic Animal Health (any microbiology, any physiology)
GG 3613	Water Resources
GG 4523	Coast Environments
ZOOLOGY ELECTIVES	
WFA 4453	Ichthyology (WFA 3133)
BIO 2103	Cell Biology (6 hours Biology, CH 1223)
BIO 3103	Genetics (MA 1313, BIO 1134)
BIO 3304	General Microbiology (CH 1053 or CH 1223)
BIO 3524	Biology of Vertebrates
BIO 4143	Population Genetics
EPP 2213	Intro to Insects
EPP 4154	General Entomology
EPP 4313	Forensic Entomology
HWI PROFESSIONAL ELECTIVES	
WFA 4463	Hum Dim of F&W Mgt (JR)
WFA	ANY UPPER-LEVEL WFA COURSE
BIO 4143	Population Genetics (BIO 1134, BIO 1144)
BIO 4233	Living with Global Change
CVM 4180	Emergency Prep Animal Health (max 3 credits)
PHI 1123	Intro to Ethics
COMPUTER APPLICATION ELECTIVES	
WFA 4253	Application of GIS (SR)
AEC 1223	Computer Applications for Ag & Life Sciences
CSE 1013	CSE AP Credit
FO 3103	Computer Applications in Forest Resources
GR 2313	Maps & Remote Sensing
GR 3303	Survey of Geospatial Tech (GR 2313)
TECH 1273	Computer Applications
TKB 2123	Intro to Database Mgt (TKT 1273 or BIS 1012)

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2022–2023 APPROVED ELECTIVE LIST
Human-Wildlife Interactions Concentration

LIFE SCIENCE ELECTIVES		NATURAL RESOURCE POLICY ELECTIVES	
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)	WFA 4363	W&F Admin and Comm (JR)
WFA 4263	Wildlife Diseases (BIO 1134, BIO 1144)	WFA 4463	Human Dim of F&W Mgt (JR)
WFA 4323	Wildlife Nutrition and Phys (BIO 1134, BIO 1144)	FO 4343	Forest Admin & Org (JR)
ADS 4114	Animal Nutrition (CH 2503/2501 OR CH 4513/4511)	FO 4353	Natural Resource Law (JR)
ADS 4633	Immunology and Diseases in Large Livestock	FO 4413	Natural Resource Policy (SR)
BIO 3303	Parasitology (BIO 1134)	PS 4743	Environmental Policy (PS 1113, PS 2703)
BIO 3504	Comparative Anatomy (BIO 1134, BIO 1144)		
BIO 4433	Principles of Virology		
BIO 4514	Animal Physiology (10 hrs of Bio Sci & Org Chem)		
CVM 4134	Aqua Anim Health Mgt. (BIO 3304, Physiology)		
PO 4033	Diseases of Poultry		
PO 4324	Avian Reproduction		
VS 3014	Anatomy and Physiology		

APPROVED SUBSTITUTIONS LIST FOR HUMAN-WILDLIFE INTERACTIONS CONCENTRATION

Required Courses	Approved Substitution
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

WLAC

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Wildlife Agriculture Conservation Concentration (Sample Schedule)
Total Hours = 124 (effective Fall 2017)

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II
CH 1043/1213	Survey of Chemistry I or Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1053/1223	Survey of Chemistry II (CH 1043) or Chemistry II (C or better in CH 1213)
EN 1103	English Comp. I (ACT subscore 17)	EN 1113	English Composition II (EN 1103)
WFA 1102	**Wildlife and Fisheries Profession** (FR, SO) (FL)	MA 1613	Calc. for Bus. and Life Sci. (C in MA 1313 or ACT math subscore 24)
	Humanities Elective (3)		Oral Communication Elective (3)
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
PSS 3303	Soils (CH 1043)	BIO 3103	Genetics (MA 1313, BIO 1134)
PSS 3301	Soils Lab (CH 1043)	**WFA 4243**	**Wildlife Techniques** (SO)
WFA 3133	**Applied Ecology** (BIO 1134 & 1144)		Statistics Elective (3)
	WFA Social Science Elective (3)		Fine Arts Elective (3)
FO 2113	Dendrology (BIO 1144)*		Social Science Elective (3)
	Humanities Elective (3)		
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
JUNIOR YEAR			
Fall Semester		Spring Semester	
WFA 4123	WF Biometrics (ST 3123 & C in MA 1613)	WFA 4373	Cons. in Ag. Landscapes (SP odd)
WFA 4153	**Prin. Wildlife Conservation and Mgt.** (SO)(WFA 3133 or FO 4123)		Crop Science Elective (3)
			WLAC Professional Elective (3)
	Writing Elective (3)		Natural Resources Policy Elective (3)
	Animal Science Elective (3)		Zoology Elective (4)
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4353	**Fish & Wildlife Policy & Law Enforcement** (SR)(FL)	**WFA 4473**	**Wildlife & Fisheries Prac.** (SR) (WFA 3133 & WFA 4153) (should be taken in last semester)
WFA 4223	**Wildlife Plant ID** (BIO 1134 & BIO 1144 & WFA 3133) (FL)		
	Life Science Elective (3-4)	WFA 4253	Application of GIS in WF* (SP)
	Aquatics Elective (3)		WLAC Professional Elective (3)
	Wildlife Biology Elective (3)		Wildlife Biology Elective (3)
			WLAC Professional Elective (3)

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

2022–2023 APPROVED ELECTIVE LIST
Wildlife Agriculture Conservation Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SO)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313) (recommended)
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR)(EN 1103, EN 1113)
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)
APPROVED SUBSTITUTIONS FOR FO 2113 DENDROLOGY	
BIO 2113	Plant Biology (BIO 1134)
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
PSS 3133	Intro Weed Science (BIO 2113; CH 1213 or CH 1053)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600(EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
PHI 1123	Intro to Ethics
PHI 3023	History of Western Philosophy I
PHI 3033	History of Western Philosophy II
PHI 3153	Aesthetics
NATURAL RESOURCE POLICY ELECTIVES	
WFA 4363	W&F Admin and Comm (JR)
WFA 4463	Human Dim of F&W Mgt (JR)
FO 4343	Forest Admin & Org (JR)
FO 4353	Natural Resource Law (JR)
FO 4413	Natural Resource Policy (SR)
PS 4743	Environmental Policy (PS 1113, PS 2703)

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

2022–2023 APPROVED ELECTIVE LIST
Wildlife Agriculture Conservation Concentration

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families
WFA SOCIAL SCIENCE ELECTIVES	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Intro to Food & Resource Econ
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EC 4043	Survey of Economics (SR)
GR 2013	Human Geography
PS 1113	American Government
PS 1313	Intro to International Relations
SO 1003	Intro to Sociology

WILDLIFE BIOLOGY ELECTIVES	
WFA 4423	Herpetology (WFA 3133)
WFA 4433	Mammalogy (WFA 3133)
WFA 4443	Ornithology (WFA 3133)
AQUATICS ELECTIVES	
WFA 4133	Fisheries Science (ST 3123)
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4233	Limnology (WFA 3133)
WFA 4313	Fisheries Mgt (WFA 3133)
WFA 4383	Wetlands Ecology (JR)(WFA 3133)
WFA 4453	Ichthyology (WFA 3133)
BIO 4224	Aquatic Botany (BIO 2113, WFA 3133)
CVM 4134	Aquatic Animal Health (any microbiology, any physiology)
GG 3613	Water Resources
GG 4523	Coast Environments
ZOOLOGY ELECTIVES	
WFA 4113	Animal Behavior
WFA 4453	Ichthyology (WFA 3133)
BIO 2103	Cell Biology (6 hours Biology, CH 1223)
BIO 3304	General Microbiology (CH 1053 or CH 1223)
BIO 3524	Biology of Vertebrates
EPP 2213	Intro to Insects
EPP 4154	General Entomology
EPP 4313	Forensic Entomology
CROP SCIENCE ELECTIVES	
EPP 4113	Principles of Plant Pathology
EPP 4263	Principles of Insect Pest Mgt
PSS 3133	Intro to Weed Science
PSS 4103	Forage and Pasture Crops
PSS 4123	Grain Crops
PSS 4133	Fiber and Oilseed Crops
PSS 4453	Vegetable Production (PSS 3303, PSS 3301)
PSS 4633	Weed Biology (PSS 3133)

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2022–2023 APPROVED ELECTIVE LIST
Wildlife Agriculture Conservation Concentration

ANIMAL SCIENCE ELECTIVES	
ADS 1113	Animal Science
ADS 3312	Livestock Management Practices (ADS 1113, ADS 1121)
ADS 4123	Animal Breeding (PO 3103, ST 2113)
ADS 4223	Goat and Sheep Production (ADS 1113, ADS 1121)
ADS 4323	Beef Cattle Science (ADS 1113, ADS 1121)
ADS 4813	Dairy Farm Mgt (ADS 1113, ADS 1121)
LIFE SCIENCE ELECTIVES	
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4263	Wildlife Diseases (BIO 1134, BIO 1144)
WFA 4323	Wildlife Nutrition and Phys (BIO 1134, BIO 1144)
ADS 1113	Animal Science (WLAC Only)
ADS 1121	Animal Science Lab
ADS 4114	Animal Nutrition (CH 2503/2501 OR CH 4513/4511)
BIO 3303	Parasitology (BIO 1134)
BIO 3504	Comparative Anatomy (BIO 1134, BIO 1144)
BIO 4514	Animal Physiology (10 hrs Bio Sci & Org Chem)
PO 4324	Avian Reproduction
VS 3014	Anatomy and Physiology

WLAC PROFESSIONAL ELECTIVES	
WFA 4000	Directed Indiv Study (3 hours max)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4273	Eco Mgt Human Wildlife Conflicts (WFA 3133)
WFA 4283	Human Wildlife Conflict Techniques (WFA 3133)
WFA 4373	Cons in Ag Landscapes
WFA 4383	Wetlands Ecology (WFA 3133)
WFA 4613	Landscape Ecology (WFA 3133, ST 2113)
WFA 4484	Upland Avian Ecology (WFA 3133, WFA 4153)
WFA	Any Upper-Level WFA Course
ABE 4313	Bio Treatment of NPS Pollution
AEC 1223	Comp Appl for Ag and Life Sci
AEC 2713	Intro to Food & Resource Economics
BIO 2503	Environmental Quality (one BIO course)
BIO 4143	Population Genetics (BIO 1134, BIO 1144)
BIO 4233	Living with Global Change
BIO 4603	Ethnobotany (BIO 1134, BIO 1144)
EPP 4154	General Entomology
FO 3103	Comp Appl in Forest Resources (one CFR course)
FO 3203	Forest Fire
FO 4123	Forest Ecology (FO 3012)
FO 4223	Silviculture (FO 4123)
FO 4221	Silviculture Lab (co-req: FO 4223)
GG 3133	Intro Environ Geology (GG 1113)
GG 3613	Water Resources
GR 2313	Maps and Remote Sensing
GR 3113	Cons Nat Resources
GR 4313	Advanced GIS (GR 4303)
PSS 4333	Soil Cons & Land Use (PSS 3303)
PSS 4373	Geospatial Agronomic Ag (PSS 3303, PSS 3133)
PSS 4633	Weed Ecology (BIO 2113, PSS 3133)

APPROVED SUBSTITUTIONS LIST FOR WILDLIFE AGRICULTURE CONSERVATION SCIENCE CONCENTRATION

Required Courses	Approved Substitution
BIO 3103 Genetics	BIO 4143 Population Genetics (BIO 1134, BIO 1144)
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
WFA 4253 Appl of GIS in WF.	FO 4313 Spatial Tech in Nat. Res. Mgt. (FO 3015 or GR 2313) FO 4473 GIS Nat Res. Mgt. GR 2313 Maps and Remote Sensing GR 3303 Survey of Geospatial Tech (GR 2313) GR 4303 Principles of GIS GR 4313 Advanced GIS
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

WLFS

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Wildlife, Fisheries and Aquaculture Science Concentration (Sample Schedule)
Total Hours = 124 (effective Fall 2017)

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II
CH 1043/1213	Survey of Chemistry I or Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1053/1223	Survey of Chemistry II (CH 1043) or Chemistry II (C or better in CH 1213)
EN 1103	English Comp. I (ACT subscore 17)	EN 1113	English Composition II (EN 1103)
WFA 1102	**Wildlife and Fisheries Profession** (FR, SO, or instructor consent)(FL)	MA 1613	Calc. for Bus. and Life Sci. (C in MA 1313 or ACT math subscore 24)
	Humanities Elective (3)		Oral Communication Elective (3)
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
PSS 3303	Soils (CH 1043)	**WFA 4243**	**Wildlife Techniques** (SO)
PSS 3301	Soils Lab (CH 1043)		Life Science Elective (4)
WFA 3133	**Applied Ecology** (BIO 1134 & 1144)		Humanities Elective (3)
	Statistics Elective (3)		Fine Arts Elective (3)
	WFA Social Science Elective (3)		WLFS Professional Elective (3)
FO 2113	Dendrology (BIO 1144)**		
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
JUNIOR YEAR			
Fall Semester		Spring Semester	
WFA 4153	**Prin Wildlife Conservation and Management** (SO)(WFA 3133 or FO 4123)	WFA 4123	Wildlife & Fisheries Biometrics (ST 3123 & C in MA 1613)
BIO 3103	Genetics (MA 1313, BIO 1134)**		Wildlife Biology Elective (3)
	Computer Application Elective (3)		Zoology Elective (4)
	Wildlife Biology Elective (3)		Aquatics Elective (3)
	WLFS Professional Elective (3)		WLFS Natural Resources Policy Elective (3)
SUMMER SEMESTER			
Students are strongly encouraged to obtain career-related professional experience. Internship credit may be available with prior approval.			
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4353	**Fish and Wildlife Policy and Law Enforcement** (SR)(FL)	**WFA 4473**	**Wildlife and Fisheries Practices** (SR)(WFA 3133 and WFA 4153)(SP) (should be taken in last semester)
WFA 4223	**Wildlife Plant ID** (BIO 1134 & BIO 1144 & WFA 3133) (FL)		Writing Elective (3)
	WLFS Professional Elective (3)		Social Science Elective (3)
	WLFS Professional Elective (3)		WLFS Professional Elective (3)
	WLFS Professional Elective (3)		WLFS Professional Elective (3)

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

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2022–2023 APPROVED ELECTIVE LIST
Wildlife, Fisheries and Aquaculture Science Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SO)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313)(recommended)
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR)(EN 1103, EN 1113)
BCH 4503	Science Communication Skills
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600 (EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
PHI 3153	Aesthetics
REL 1103	Intro to Religion
REL 3213	World Religions I
REL 3223	World Religions II
APPROVED SUBSTITUTIONS FOR FO2113 DENDROLOGY	
BIO 2113	Plant Biology (BIO 1134)
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
PSS 3133	Intro Weed Science (BIO 2113; CH 1213 or CH 1053)

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

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2022–2023 APPROVED ELECTIVE LIST
Wildlife, Fisheries and Aquaculture Science Concentration

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families
WFA SOCIAL SCIENCE ELECTIVES	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Intro to Food & Resource Econ
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EC 4043	Survey of Economics (SR)
GR 2013	Human Geography
PS 1113	American Government
PS 1313	Intro to International Relations
SO 1003	Intro to Sociology

WILDLIFE BIOLOGY ELECTIVES	
WFA 4423	Herpetology (WFA 3133)
WFA 4433	Mammalogy (WFA 3133)
WFA 4443	Ornithology (WFA 3133)
AQUATICS ELECTIVES	
WFA 4133	Fisheries Science (ST 3123)
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4183	Prin & Prac of Aquaculture (BIO 1134, BIO 1144)
WFA 4233	Limnology (WFA 3133)
WFA 4313	Fisheries Mgt (WFA 3133)
WFA 4383	Wetlands Ecology (JR)(WFA 3133)
WFA 4453	Ichthyology (WFA 3133)
BIO 4224	Aquatic Botany (BIO 2113, WFA 3133)
CVM 4134	Aquatic Animal Health (any microbiology, any physiology)
GG 3613	Water Resources
GG 4523	Coast Environments
ZOOLOGY ELECTIVES	
WFA 4113	Animal Behavior
WFA 4453	Ichthyology (WFA 3133)
BIO 2103	Cell Biology (6 hours Biology, CH 1223)
BIO 3304	General Microbiology (CH 1053 or CH 1223)
BIO 3524	Biology of Vertebrates
EPP 2213	Intro to Insects
EPP 4154	General Entomology
EPP 4313	Forensic Entomology
LIFE SCIENCE ELECTIVES	
WFA 4173	Fish Physiology (BIO 1134, BIO 1144)
WFA 4263	Wildlife Diseases (BIO 1134, BIO 1144)
WFA 4323	Wildlife Nutrition and Phys (BIO 1134, BIO 1144)
ADS 4114	Animal Nutrition (CH 2503/2501 OR CH 4513/4511)
BIO 3303	Parasitology (BIO 1134)
BIO 3504	Comparative Anatomy (BIO 1134, BIO 1144)
BIO 4433	Principles of Virology
BIO 4514	Animal Physiology (10 hrs Bio Sci & Org Chem)
CVM 4134	Aqua Animal Health Mgt (BIO 3304, Phys course)
PO 4033	Diseases of Poultry
PO 4324	Avian Reproduction
VS 3014	Anatomy and Physiology

2022–2023 APPROVED ELECTIVE LIST
Wildlife, Fisheries and Aquaculture Science Concentration

WLFS PROFESSIONAL ELECTIVES	
WFA	Any Upper-Level WFA Course
BCH 4503	Science Communication Skills
BIO 2503	Environmental Quality (any BIO course)
BIO 3113	Marine Biology (BIO 1134)
BIO 3303	Parasitology (BIO 1134)
BIO 4113	Evolution (MA 1313, BIO 1134, BIO 1144, BIO 3103)
BIO 4143	Population Genetics (BIO 1134, BIO 1144)
BIO 4233	Living with Global Change
BIO 4603	Ethnobotany (BIO 1134, BIO 1144)
BIO 4703	Avian Diversity (BIO 1134, BIO 1144)
CO 4323	Mass Media-Society
CVM 4180	Emergency Prep Animal Health (3 hrs max)
EPP 4154	General Entomology
FO 3113	For Recreation Management
FO 3203	Forest Fire
FO 4223	Silviculture (WFA 3133, WFA 4223)
FO 4221	Silviculture Lab (coreq: FO 4223)
FO 4313	Spatial Tech in NR Mgt (FO 3015 or GR 2313)
GG 3603	Intro to Oceanography
GG 4523	Coast Environments
GR 3113	Conservation of NR (JR)
GR 4303	Principles of GIS
PHI 4143	Phil of Science

COMPUTER APPLICATION ELECTIVES	
WFA 4123	Wildlife and Fisheries Biometrics (ST 3123, C or better in MA 1613)
WFA 4253	Application of GIS in WF (SR)
AEC 1223	Computer Applications for Ag & Life Sciences
CSE 1013	CSE AP Credit
FO 3103	Computer Applications in Forest Resources
GR 2313	Maps & Remote Sensing
GR 3303	Survey of Geospatial Tech. (GR 2313)
TECH 1273	Computer Applications
TKB 2123	Intro to Database Mgt (TKT 1273 or BIS 1012)
NATURAL RESOURCE POLICY ELECTIVES	
WFA 4363	W&F Admin and Comm (JR)
WFA 4463	Hum Dim WF Mgt
FO 4343	Forest Admin & Org (JR)
FO 4353	Natural Resource Law (JR)
FO 4413	Natural Resource Policy (SR)
PS 4743	Environmental Policy (PS 1113, PS 2703)

APPROVED SUBSTITUTIONS LIST FOR WILDLIFE, FISHERIES AND AQUACULTURE SCIENCE CONCENTRATION

Required Courses	Approved Substitution
BIO 3103 Genetics	BIO 4143 Population Genetics (BIO 1134, BIO 1144)
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

WLVM

2022–2023 WILDLIFE, FISHERIES AND AQUACULTURE MAJOR
Wildlife Veterinary Medicine Concentration (Sample Schedule)
Total Hours = 124 (effective Fall 2017)

This concentration is offered to students who wish to fulfill the academic requirements for entrance into veterinary school but wish to complete a baccalaureate program before entering into veterinary school. This curriculum satisfies the academic requirements of TWS Wildlife Certification.

FRESHMAN YEAR			
Fall Semester		Spring Semester	
BIO 1134	Biology I	BIO 1144	Biology II
CH 1213	Chemistry I (C in MA 1313 or ACT math subscore 24)	CH 1221	Investigations in Chem. II (CH 1211)
		CH 1223	Chemistry II (C or better in CH 1213)
CH 1211	Investigations in Chem. I	EN 1113	English Composition II (EN 1103)
EN 1103	English Comp. I (ACT subscore 17)	PH 1113	General Physics I (MA 1323 or ACT math subscore 26)
MA 1613	Calc. for Bus. & Life Sci. (C in MA 1313 or ACT math subscore 24)		Oral Communication Elective (3)
WFA 1102	**Wildlife & Fisheries Profession** (FR or SO.) (FL)		
SOPHOMORE YEAR			
Fall Semester		Spring Semester	
BIO 3304	Gen. Microbio. (CH 1053 or 1223)	BCH 4013	Prin. of Biochemistry (CH 2503 or BIO 1134)
CH 4513	Organic Chem. I (CH 1223/1221)	BIO 3103	Genetics (MA 1313, BIO 1134)
CH 4511	Organic Chem. I Lab (CH 1223/1221)	CH 4523	Organic Chem. II (CH 4513/4511)
PH 1123	General Physics II (PH 1113)	CH 4521	Organic Chem. II Lab (CH 4513/4511)
	Plant Elective (3)		Social Science Elective (3)
			Statistics Elective (3)
SUMMER SEMESTER			
Externship (>480 hours of work experience)			
JUNIOR YEAR			
Fall Semester		Spring Semester	
BIO 2103	Cell Biology (6 hrs. bio & CH 1223)	**WFA 4243**	**Wildlife Techniques** (SO)
WFA 3133	**Applied Ecology** (BIO 1134, BIO 1144)		Wildlife Vet Professional Elective (3)
			Wildlife Biology Elective (3)
WFA 4123	WF Biometrics (ST 3123 & C in MA 1613)		WFA Social Science Elective (3)
WFA 4173	Fish Physiology (FL)		Wildlife Vet Professional Elective (3)
	Humanities Elective (3)		
Summer Semester			
Externship (>480 hours of work experience)			
SENIOR YEAR			
Fall Semester		Spring Semester	
WFA 4153	**Prin. Wildlife Cons. and Mgt.** (SO)(WFA 3133 or FO 4123)	**WFA 4473**	**Wildlife & Fisheries Practices** (SR)(WFA 3133 & WFA 4153)(should be taken in last semester)
WFA 4223	**Wildlife Plant ID** (BIO 1134 & BIO 1144 & WFA 3133) (FL)		Wildlife Vet Professional Elective (3)
			Natural Resources Policy Elective (3)
WFA 4353	**Fish and Wild. Policy & Law** (SR)(FL)		Free Elective (1)
	Wildlife Biology Elective (3)		Writing Elective (3)
	Fine Arts Elective (3)		Humanities Elective (3)

Classes in **BOLD** require a C or better. FL= offered only in fall semester; SP= offered only in spring semester
SO=Sophomore standing, JR=Junior standing, SR=Senior standing
An accelerated 3+1 course schedule is available to qualified students. Please check with your advisor.

SECTION IV: DEPARTMENT OF WILDLIFE, FISHERIES AND AQUACULTURE

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2022–2023 APPROVED ELECTIVE LIST
Wildlife Veterinary Medicine Concentration

FINE ARTS ELECTIVES (MSU CORE)	
ARC 1013	Architectural Appreciation
ART 1013	History of Art I
ART 1023	History of Art II
ART 1113	Art Appreciation
ART 2063	Global Contenporary Art
ART 2413	His & Appr of the Artcrafts
CO 1503	Intro to the Theatre
HON 3173	Honors Seminar in Fine Arts (SO)
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	His & Appr of Music
MU 1123	American Music App
MU 1133	History of Rock and Roll
PE 1323	His & Appr of Dance
PSS 2343	Floral Design
STATISTICS ELECTIVES (MSU CORE)	
ST 2113	Intro to Stats (ACT Math subscore 24 or C in MA 1313 or MA 1213)
ST 3123	Intro to Stat. Inf. (ACT Math subscore 24 or C in MA 1313) (recommended)
ORAL COMMUNICATION ELECTIVES	
AELC 3333	Presentations in Ag & Life Sci (AELC 3203)
CO 1003	Fund of Public Speaking
CO 1013	Intro to Communication
WRITING ELECTIVES	
AELC 3203	Prof Writing ANR Hum Sci (JR)(EN 1103, EN 1113
CO 3343	Writing for the Media (C in EN 1113)
EDF 3413	Writing for Thinking (EN 1103, EN 1113)
EN 3313	Writing for the Workplace (EN 1113)
MGT 3213	Organizational Communication (EN 1113)
PLANT ELECTIVES	
BIO 2113	Plant Biology (BIO 1134)
BIO 2213	Survey of Plant Kingdom
BIO 4203	Taxonomy of Spermatophytes (BIO 2113, BIO 2213)
BIO 4213	Plant Ecology
FO 2113	Dendrology (BIO 1144 or BIO 2113)
PSS 3133	Intro Weed Science (BIO 2113; CH 1213 or CH 1053)

HUMANITIES ELECTIVES (MSU CORE)	
AAS 1063	Intro to African American Studies
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II (ARC 2313)
EN/FL 2123	Greek and Latins Roots of English
EN 2203	Intro to Lit (EN 1103, EN 1113)
EN 2213	English Lit Before 1800 (EN 1103, EN 1113)
EN 2223	English Lit After 1800 (EN 1103, EN 1113)
EN 2243	American Lit Before 1865 (EN 1103, EN 1113)
EN2253	American Lit After 1865 (EN 1103, EN 1113)
EN 2273	World Lit Before 1600 (EN 1103, EN 1113)
EN 2283	World Lit After 1600 (EN 1103, EN 1113)
FL 1113-2143	Foreign Language
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History Before 1500
HI 1173	World History After 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civ to 1300
HI 1323	East Asian Civ II
HI 4683	Europe: WWI to Hitler (one HI course)
HON 1163	The Quest Begins
HON 3183	Hon Sem in the Hum (SO)(EN 1103, EN 1113)
PHI 1103	Intro to Philosophy
PHI 1113	Intro to Logic
PHI 1123	Intro to Ethics
PHI 3023	History of Western Philosophy I
PHI 3033	History of Western Philosophy II
PHI 3153	Aesthetics
REL 1103	Intro to Religion
REL 3213	World Religions I
REL 3223	World Religions II
NATURAL RESOURCE POLICY ELECTIVES	
FO 4343	Forest Admin & Org (JR)
FO 4353	Natural Resource Law (JR)
FO 4413	Natural Resource Policy (SR)
PS 4743	Environmental Policy (PS 1113, PS 2703)
WFA 4363	W&F Admin and Comm (JR)
WFA 4463	Human Dim of F&W Mgt (JR)

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2022–2023 APPROVED ELECTIVE LIST
Wildlife Veterinary Medicine Concentration

SOCIAL SCIENCE ELECTIVES (MSU CORE)	
ADS 1013	Animal Agriculture & Society: Food for Thought
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Introduction to Archaeology
AN 2403	Introduction to the Study of Language
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
EC 1033	Economics of Social Issues
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics (AEC 2713)
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HDFS 1813	Development through the Lifespan
HON 1173	The West and the Wider World
HON 3143	Hon Seminar in Soc Sci (SO)(EN 1103, EN 1113)
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations (PSY 1013)
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families

WILDLIFE BIOLOGY ELECTIVES	
WFA 4423	Herpetology (WFA 3133)
WFA 4433	Mammalogy (WFA 3133)
WFA 4443	Ornithology (WFA 3133)
WILDLIFE VET PROFESSIONAL ELECTIVES	
ADS 3014	Anatomy and Physiology
ADS 4114	Animal Nutrition
BIO 3303	Parasitology
BIO 4413	Immunology
PO 4324	Avian Reproduction
WFA 4263	Wildlife Diseases
WFA 4323	Wildlife Nutrition & Phys
VS 3014	Anatomy & Physiology
WFA SOCIAL SCIENCE ELECTIVES	
AEC 2713	Intro to Food & Resource Econ
EC 2113	Prin of Macroeconomics (SO)
EC 2123	Prin of Microeconomics (SO)
EC 4043	Survey of Economics (SR)
GR 2013	Human Geography
PS 1113	American Government
PS 1313	Intro to International Relations
SO 1003	Intro to Sociology

APPROVED SUBSTITUTIONS LIST FOR WILDLIFE VETERINARY MEDICINE CONCENTRATION

Required Courses	Approved Substitution
MA 1613 Calc. Bus/Life Science	MA 1713 Calculus I
PH 1113 General Physics I	PH 2213 Physics I
PH 1123 General Physics II	PH 2223 Physics II
WFA 4173 Fish Physiology	CVM 4134 Aqua Anim Health Mgt. (BIO 3304, Physiology)
EN 1103 English Comp I	C or better in EN 1104 Expanded English Comp I (ACT English Sub-score of 16 or below)

SECTION V: DESCRIPTION OF CFR COURSES

Course numbers consist of four digits. The first digit indicates the level of preparation required and the fourth digit indicates the number of semester hours. The two middle digits are for department use. A fourth digit of zero (0) means that credit awarded is in consultation with the instructor. Where the same course is offered on both the undergraduate and graduate levels, two numbers are used to designate the levels of credit; ex. FO 4113/6113.

Department of Sustainable Bioproducts

SBP 1001. UNDERGRADUATE SEMINAR. (1). One hour lecture. First-year seminars explore a diverse array of topics and provides students with an opportunity to learn about a specific discipline from skilled faculty members

SBP 1103. INTRODUCTION TO SUSTAINABLE BIOPRODUCTS. (3) Three hours lecture. A survey of biomass structure, anatomy, properties and chemistry, and the processes used to manufacture sustainable biomass-based products

SBP 2012. INTRODUCTION TO BIOPRODUCT INDUSTRIES. (2) One hour lecture and one hour Laboratory/Field Trip. This course will be taught as a site tour of bioproduct industries focusing on conversion and use of biomass resources in the Southeastern United States. (During the two weeks of intersession term, class will meet six hours per day.)

SBP 2123. MATERIALS AND PROCESSING IN SUSTAINABLE BIOPRODUCTS. (3) (Prerequisite: SBP 2012 or consent of instructor). Three hours lecture. Introduction to processing of sustainable biomaterials including generation of by-products; also methods for product evaluation with American Society of Testing and Materials (ASTM) standards

SBP 2990. SPECIAL TOPIC IN SUSTAINABLE BIOPRODUCTS. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

SBP 3113. PHYSICS OF BIOMATERIALS (3) (PREREQUISITE: SBP 1103 or consent of instructor). Two hours lecture and three hours lab. Focuses on understanding important physical properties of biomaterials and the relationship of these properties to manufacturing processes and product uses. Other topics will include dimensional stability, thermal & electrical properties & moisture movement.

SBP 3123. BIOMASS TO BIOPRODUCTS. (3) (Prerequisite: CH 1043 or equivalent). Three hours lecture. Introduction to chemical/physical properties of forestry and agro crops with overview of products derived from plant materials. Innovative and emerging bioproducts industries are described.

SBP 3133. MECHANICS OF BIOMATERIALS. (3) Three hours lecture and two hours lab. The course is designed for students to gain fundamental knowledge about mechanics of biomaterials, including tensile, compression, shear, and bending properties. It also introduces the effects of load duration and environmental factors on these mechanical properties.

SBP 4000. DIRECTED INDIVIDUAL STUDY. (1-6). Hours and credits to be arranged.

SBP 4013. WOOD ANATOMY. (3) (Prerequisite: SBP 1103 or consent of instructor). Two hours lecture. Three hours laboratory. Anatomy of commercial timber species; elements of botanical microtechnique, fundamentals of microscopy, and fundamental properties: gross and minute structural characteristics of wood leading to identification

SBP 4023. LIGNOCELLULOSIC BIOMASS CHEMISTRY. (3) Three hour lecture. (Prerequisites: CH 1043 and CH 1053 or equivalent.) Chemical composition of lignocellulosic biomass (wood, agricultural residues, and bioenergy crops) including cellulose, hemicelluloses, lignin, and extractives, their structures, isolation, processes and applications.

SBP 4113. ADHESIVES AND BIOCOMPOSITES. (3) Two hours lecture. Three hours laboratory. (Prerequisites: SBP 2123, SBP 3113, SBP 3123, and CH 1053.) Theories and practices of adhesives and finishing materials used in the manufacture of biocomposite products and furniture.

SBP 4123. LUMBER MANUFACTURE. (3) Two hours lecture. Three hours laboratory. Raw materials, production methods and product specifications for sawn wood products. Machinery and plant layout. Operation, control, and analysis of lumber manufacturing systems; markets. The laboratory is used for problems, discussion, demonstration, tests, field trips, and writing assignments

SBP 4133. BIOREFINERY PROCESSES. (3) (Prerequisites: SBP 4023 or consent of instructor). Three hours lecture. An overview of the different chemical and thermochemical biorefinery processes used to convert biomass into chemicals and fuels.

Department of Sustainable Bioproducts

SBP 4153. BIOMASS PRODUCTS MANUFACTURING. (3) (Prerequisite: BIO 1134/BIO 1144/consent of instructor) Three hours lecture. Introduction to concepts of conversion of biomass covering subjects: physical properties of wood, product manufacturing, wood chemistry, composites/adhesives, and the use of organisms or isolated enzymes used to break down cellulose, lignin and hemicelluloses.

SBP 4213. DETERIORATION AND PRESERVATION OF BIOMATERIALS. (3) Two hours lecture. Three hours laboratory. (Prerequisite: SBP 1103 or Consent of Instructor). Thermal, biological, and mechanical agents of bioproducts deterioration; biological control; design considerations; preservatives, preservation systems; treatability; preservative effectiveness; standards, pollution control.

SBP 4243. SUSTAINABLE BIOPRODUCTS. (3) (Prerequisite: SBP 3123 or consent of instructor). Three hours lecture. Expanding students' knowledge of bioproducts, manufacturing principles and processes according to various industrial fields and insights into new approaches and methods in bioproducts industries.

SBP 4253. QUANTITATIVE METHODS IN SUSTAINABLE BIOPRODUCTS. (3) Three hours lectures. (Prerequisite: MA 1313 and MA 1323 or equivalent and SBP 2123). The study and practical application of quantitative techniques commonly used in industry to evaluate the net worth of raw materials, and the cause and effect on process variables.

SBP 4263. FURNITURE DESIGN AND FABRICATION. (3) (Prerequisite: SBP 3113 or consent of instructor). Two hours lecture. Three hours laboratory. Basic theories and principles of furniture strength design and manufacturing; mechanical properties of environmentally preferable materials; green and sustainable design of certifications; testing standards. Machines used, function and operation. Advanced manufacturing and quality control methods.

SBP 4313. BIOPRODUCTS AND THE ENVIRONMENT. (3) (Prerequisites: SBP 2012, 2123, and 3123 or consent of instructor). Three hours lecture. An introduction to environmental topics and laws, environmental impact, and control technologies associated with emissions from diverse sustainable bioproducts industries, including global and national issues.

SBP 4353. FOREST PRODUCTS MARKETING. (3) Three hour lecture. Marketing and business practices used by forest products companies trading in lumber, engineered wood products and furniture.

SBP 4443. CAPSTONE SUSTAINABLE BIOPRODUCTS. (3) (Prerequisite: consent of instructor). Integration of knowledge from courses and current issues involving team projects that explore manufacturing problems or product design, emphasizing LCA, social /global perspectives, and problem solving.

SBP 4450. UNDERGRADUATE RESEARCH IN SUSTAINABLE BIOPRODUCTS. (1-6) (Prerequisite: Senior Standing and consent of instructor). 1-6 Variable hour laboratory. This course is introduced to introduce senior level students to the concepts of independent and original research. (Course limited to two offerings).

SBP 4800. UNDERGRADUATE RESEARCH. Hours, credits and deliverables to be arranged. The purpose of this course is to provide a student with the opportunity to participate in research and/or creative project beyond the traditional undergraduate experience.

SBP 4990. SPECIAL TOPIC IN SUSTAINABLE BIOPRODUCTS. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

Department of Forestry

FO 1001. FIRST YEAR SEMINAR. (1) One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FO 1101. FOREST RESOURCES SURVEY. (1) One hour lecture. Survey of the professional resource manager's role and career opportunities in providing forest-based goods and services. Not open to Forest Resources majors with senior standing. Fall Only.

FO 2113. DENDROLOGY. (3) (Prerequisites: BIO 1144 or BIO 2113 or equivalent. Two hours lecture. Four hours laboratory. Introduction to the identification and systematic classification of trees and other woody plants. Field exercises to promote the recognition and identification of trees and other woody plants.

FO 2213. FOREST MEASUREMENTS. (3)(Prerequisite: ST 2113 or equivalent). Three hour lecture. Principles of measurement for standing and felled trees. Inventory and sampling theory for forested lands. Spring Only.

FO 2443. ESSENTIALS BIOTECHNOLOGY. (3) Three hours lecture. An introduction to principles and applications of biotechnology. (Same as CVM 2443).

FO 2990. SPECIAL TOPICS IN FORESTRY. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

FO 3003. INTERNSHIP IN FORESTRY. (3) (Prerequisite: Junior standing or consent of instructor). Professional work experience with firms or companies, non-governmental organizations, government agencies and other relevant entities.

FO 3012. INTRODUCTION TO FOREST COMMUNITIES. (2) (Prerequisites: PSS 3303, FO 2113). Field exercises to gain practical knowledge of soil-geology-ecology interrelationships through trips to various physiographic regions. Summer Only.

FO 3015. FOREST DESCRIPTION AND ANALYSIS. (5) (Prerequisite: FO 2213, ST 2113). Field and laboratory exercises to gain practical experience with forest and land measurement techniques and equipment. Mapping, inventory, and analysis of forested tracts. Summer Only.

FO 3103. COMPUTER APPLICATIONS FOR FOREST RESOURCES. (3) (Prerequisite: Three hours of courses in the College of Forest Resources or consent of instructor.) Two hour lecture and two hour laboratory. Application of microcomputer concepts in forest resources with emphasis in Forestry and general and professional software packages in professional settings. Practice and demonstration of general and professional software packages used in upper level courses and professional settings in Forest Resources. Spring Only.

FO 3113. FOREST RECREATION MANAGEMENT. (3) Three hour lecture. Studies of the management of forest resources for outdoor recreation. Fall Only.

FO 3203. FOREST FIRE. (3) Two hour lecture. Three hour laboratory. Basic aspects of fire history, fire behavior, fire weather, fire effects, and management of fire. Emphasis on the use of prescribed burning in forest management. Fall Only.

FO 3213. TREE PHYSIOLOGY. (3) (Prerequisites: BIO 1134 and BIO 1144 or equivalents). Three hours lecture. Physiological principles (photosynthesis, water relations and nutrient uptake) in the context of the unique physical attributes of trees including their large multi-dimensional crowns, long distance transport systems, woody stems and longevity. Spring Only.

FO 4000. DIRECTED INDIVIDUAL STUDY. Hours and credits to be arranged.

FO 4113/6113. FOREST RESOURCE ECONOMICS. (3) (Prerequisites: AEC 2713 or equivalent). Three hour lecture. Basic principles of forest resource valuation; economics applied to production, conversion, marketing and consumption of forest products and benefits. Spring Only.

FO 4123/6123. FOREST ECOLOGY. (3) (Prerequisite: FO 3012. Three hour lecture. Four hours laboratory. Natural principles governing establishment, development, and functioning of forest ecosystems. Includes ecology, genetics, physiology, tree growth, reproduction, site classification, stand dynamics, hydrology, nutrition, and succession. Fall Only.

FO 4203. COMPUTER APPL. FOREST RES II. (3) Three hours lecture. Basic principles of spreadsheet operations, worksheet management, formula integration, data analysis, and report building in forestry and natural resource management with emphasis on forest business applications.

Department of Forestry

FO 4213/6213. FOREST BIOMETRICS. (3) (Prerequisite: ST 2113 or equivalent or consent of instructor). Three hour lecture. Applications of mensurational and statistical principles and techniques in determination of forest growth and yield. Advanced topics of forest resource inventory. Spring Only.

FO 4221/6221. PRACTICE OF SILVICULTURE LABORATORY. (1) (Prerequisite: FO 4123/6123, or WFA 4123; Corequisite: FO 4223/6223). Four hour laboratory. Application of silviculture practices and operations under given forest land management objectives. Spring Only.

FO 4223/6223. PRACTICE OF SILVICULTURE. (3) (Prerequisite: FO 4123/6123 or WFA 3133 and WFA 4123; Corequisite: FO 4221/6221). Three hour lecture. Manipulation to obtain desired reproduction and to attain optimum development under given forest land management objectives. Spring Only.

FO 4231/6231. INTRODUCTION TO WOOD SUPPLY SYSTEMS. (1) (Corequisite: FO 3015). Investigative field and laboratory exercises used to gain practical knowledge into the structure and performance of wood supply systems. Summer Only.

FO 4233/6233. FOREST OPERATIONS AND HARVESTING. (3) (Prerequisite: FO 3015, FO 4231/6231, or consent of instructor). Three hour lecture. Study of practical, managerial, and logistic considerations associated with harvesting and other forest operations, as well as their social, environmental and legal influences. Fall Only.

FO 4253/6253. TIMBER PROCUREMENT. (3) (Prerequisites: FO 4231/6231, FO 4233/6233). Lectures and field exercises dealing with the problems of timber procurement to include planning for harvest, methods of handling and transport, legal and safety considerations. Fall Only.

FO 4313/6313. SPATIAL TECHNOLOGIES IN NATURAL RESOURCES MANAGEMENT. (3) (Prerequisite: FO 3015 or GR 2313 or consent of instructor). Three hours lecture. Three hour laboratory. Fundamentals of scale, area, height, and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; application to natural resources. Fall Only.

FO 4323/6323. FOREST RESOURCE MANAGEMENT. (3) (Prerequisites: FO 4113/6113, FO 4213/6213, FO 4223/6223, FO 4233/6233, FO 4231/6231). Three hour lecture. Three hours laboratory. Application of quantitative decision making techniques to stand-level and forest-wide management problems. Topics include land classification, forest production, optimal rotation analysis, and harvest scheduling. Fall Only.

FO 4343/6343. FOREST ADMINISTRATION AND ORGANIZATION. (3) Three hours lecture. Hierarchy and land structuring of forest organizations. Legal aspects of administering forest and holdings. Fall Only.

FO 4353/6353. NATURAL RESOURCE LAW. (3) (Prerequisite: Junior standing or consent of instructor). Three hours lecture. A comprehensive study of the laws relating to natural resources and forestry with emphasis on tort Law, real property law, environmental law, taxation law and contract law. Spring Only.

FO 4411-4441/6411-6441. REMOTE SENSING SEMINAR. (1) (Prerequisite: Junior standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411-4441, ECE 4411-4441, and GR 4411-4441.) Fall Only.

FO 4413/6413. NATURAL RESOURCES POLICY. (3) (Prerequisite: Senior standing). Three hours lecture. Current topics relating to natural resources policy which affect management decisions and practices in the public and private sectors of natural resources use. Spring Only.

FO 4423/6423. PROFESSIONAL PRACTICE. (3) (Prerequisite: FO 4323/6323). Three hours lecture. Four hours laboratory. Forest resource data collection and analysis. Development of forest resource alternatives and recommendations for a specific forest property. Spring Only.

FO 4443 INT'L FOR RES & TRAD. (3) (Prerequisite: consent of instructor). Three hours lecture. A study of the world's wood consumption, marketing arrangements, community forestry, and forestry in economic development.

Department of Forestry

FO 4453/6453. REMOTE SENSING APPLICATIONS. (3) Prerequisites: A basic image interpretation or remote sensing course or consent of instructor). Two hour lecture. Three hour laboratory. An introduction to remote sensing with emphasis on analysis and applications of digital image data in inventory, monitoring, and management of renewable natural resources. Laboratory emphasis is on computer applications and digital techniques of image analysis. Spring Only.

FO 4463/6463. FOREST HYDROLOGY AND WATERSHED MANAGEMENT. (3) (Prerequisite: PSS 3303, FO 3012, FO 4123/6123, or consent of instructor). Three hour lecture. Synthesis of current information on the fundamental properties and processes of forest soils, hydrology, and water quality with emphasis on watershed and ecosystem management factors. Spring Only.

FO 4473. GIS FOR NATURAL RESOURCES MANAGEMENT. (3) (Prerequisite: Junior standing). Two hours lecture and three hours laboratory. Introduction to geographic information systems (GIS) with emphasis on collection, encoding, storage, retrieval, and analysis of spatial data for use in management of natural resources.

FO 4483/6483. FOREST SOILS. (3) (Prerequisite: PSS 3303, FO 3012, FO 4123/6123, or consent of instructor). Three hour lecture. Synthesize current information on fundamental properties and processes of forest soils with emphasis on applications to silviculture, soil conservation, and sustainable management of forested ecosystems. Spring Semesters of Odd Years Only.

FO 4513. FORESTRY CONSERVATION EDUC. (3) Two hours lecture; two hours lab). Importance of forestry and natural resources conservation, application of forestry and conservation principles and practices to educational settings. For non-forestry majors.

FO 4573. ECOLOGY OF MANAGEMENT FORESTS. (3) Three hours lecture. Examination of the ecological factors that influence silvicultural practice in North America. (Same as NREC 4573).

FO 4663. CONSULTING FORESTRY. (3) (Prerequisite: FO major, senior or graduate standing and consent of instructor). Three hours lecture. Review of business, legal, and economic issues integral to applying the science of forestry as a service based enterprise.

FO 4683. INTRO TO URBAN AND COMMUNITY FORESTRY. (3) Three hours lecture. Addresses urban forest management issues and opportunities as well as educational extension/outreach program strategies within the urban forest context. (Same as NREC 4683)

FO 4771. SEEING FOREST FOR TREES: CAREER (1) One hour lecture plus laboratory experience. A course for upper-level, non-Forestry majors providing an overview of forest management, wood products, manufacturing facilities, and career opportunities for non-foresters.

FO 4800. UNDERGRADUATE RESEARCH. Hours, credits and deliverables to be arranged. The purpose of this course is to provide a student with the opportunity to participate in research and/or creative project beyond the traditional undergraduate experience.

FO 4990/6990. SPECIAL TOPICS IN FORESTRY. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

NREC 2990. SPECIAL TOPICS IN FORESTRY. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

NREC 3113. FOREST RECREATION MANAGEMENT. Studies of the management of forest resources for outdoor recreation. (Same as FO 3113).

NREC 3213. ENVIRONMENTAL MEASUREMENTS. (Prerequisite: ST 2113) Two hours lecture. Two hours Laboratory. Principles of inventory, sampling and analysis for measurements in environmental assessments. Field exercises provide practice in sampling methods, data collection, instrumentation, and analysis. Spring Only.

NREC 4000. DIRECTED INDIVIDUAL STUDY. Hours and credits to be arranged.

NREC 4313. SPATIAL TECH NAT RES MGT. (Prerequisite: FO 3015 or GR 2313 or consent of instructor). Three hours lecture. Three hours laboratory. Fundamentals of scale, area, height, and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; applications to natural resources. (Same as FO 4313).

Department of Forestry

NREC 4353. NATURAL RESOURCE LAW. Three hours lecture. A comprehensive study of the laws relating to natural resources and forestry with emphasis on tort law, real property law, environmental law, taxation law and contract law. (Same as FO 4353).

NREC 4413. NATURAL RESOURCE POLICY. Three hours lecture. A comprehensive study of the laws relating to natural resources and forestry with emphasis on tort law, real property law, environmental law, taxation law and contract law. (Same as FO 4353).

NREC 4423. ENVIRONMENTAL ASSESSMENT. (Prerequisite: NREC senior level standing or consent of instructor). Two hours lecture. Two hours laboratory. Principles of assessing environmental impacts resulting from planned management activities affecting natural resources. Preparation of Environmental Impact Statements (EIS). Spring Only.

NREC 4463. FOREST HYDRO & WATERSHED MGT. (Prerequisite: PSS 3303, FO 3012, FO 4123/6123, or consent of instructor). Three hours lecture. Synthesis of current information on the fundamental properties and processes of forest soils, hydrology, and water quality with emphasis on watershed and ecosystem management factors. (Same as FO 4463).

NREC 4573. ECOLOGY OF MANAGED FORESTS. Three hours lecture. Examination of the ecological factors that influence silvicultural practice in North America. (Same as FO 4573).

NREC 4683. INTRO TO URBAN AND COMMUNITY FORESTRY. Three hours lecture. Addresses urban forest management issues and opportunities as well as educational extension/outreach program strategies within the urban forest context. (Same as FO 4683).

NREC 4800. UNDERGRADUATE RESEARCH. The purpose of this course is to provide a student with the opportunity to participate in research and/or creative project beyond the traditional undergraduate experience, while allowing the university to track undergraduate participation in these activities. Hours, credits and deliverables to be arranged.

NREC 4990. SPECIAL TOPICS IN NREC. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

Department of Wildlife, Fisheries and Aquaculture

WFA 1001. FIRST YEAR SEMINAR. (1 hour) (Prerequisite: First year student). One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members. Fall Only.

WFA 1102. WILDLIFE AND FISHERIES PROFESSION. (2) (Prerequisite: Freshman or Sophomore standing or consent of instructor). Two hour lecture. Orientation to the interdisciplinary and applied nature of wildlife and fisheries management and related fields, emphasizing the department, college, and university; student roles and responsibilities; and career opportunities. Fall Only.

WFA 2990. SPECIAL TOPICS IN WILDLIFE AND FISHERIES. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

WFA 3000. INTERNSHIP IN WILDLIFE, FISHERIES OR AQUACULTURE. (1-4) (Prerequisite: Junior Standing and 2.75 GPA or better). Professional work experience with governmental or private agencies. (Hours and credits to be arranged).

WFA 3031. INTRODUCTORY WILDLIFE/FISHERIES PRACTICES. (1) (Prerequisite: Junior standing). Field exercises and practical exposure to research and management of wildlife and fish species and habitats in Mississippi. Summer Only.

WFA 3133. APPLIED ECOLOGY. (3) (Prerequisite: BIO 1134 and BIO 1144 or consent of instructor). Two hour lecture. Four hour laboratory, alternate weeks. The application of ecological principles which serve as a basis for the management of wildlife and fisheries in terrestrial and aquatic habitats.

WFA 4000. DIRECTED INDIVIDUAL STUDY. Hours and credits to be arranged.

WFA 4113/6113. ANIMAL BEHAVIOR. (3) (Prerequisite: WFA 3133, BIO 3104 or equivalent). Two hours lecture, two hours lab. Emphasizes applied approaches to the study of animal behavior. Covers fundamental principles, early studies in ethology, genetic, physiological and selective mechanisms, behavioral ecology, emerging field of conservation behavior, and integration of behavior into habitat management.

WFA 4123. WILDLIFE AND FISHERIES BIOMETRICS. (3) (Prerequisite: ST 3123 and a grade of C or better in MA 1613, or consent of instructor). Two hour lecture. Three hour laboratory. Application of statistical and mathematical tools and software to address wildlife and fisheries management/research questions.

WFA 4133/6133. FISHERIES SCIENCE. (3) (Prerequisite: ST 3123 or equivalent). Two hour lecture. Four hour laboratory, alternate weeks. Study of the biological parameters of fish populations. Spring Semesters of Even Years Only.

WFA 4153. PRINCIPLES OF WILDLIFE CONSERVATION AND MANAGEMENT. (3) (Prerequisite: Sophomore standing, WFA 3133 or FO 4123 or equivalent) Two hour lecture. Four hour laboratory on alternate weeks. Principles of game management; habitat improvement; wildlife techniques; public relations.

WFA 4173/6173. FISH PHYSIOLOGY. (3) Prerequisite: BIO 1134 and BIO 1144 or consent of instructor) Two hour lecture. Four hour laboratory, alternate weeks. Basic anatomy and physiology of major systems in fish: integration of the physiological systems as they function during development, growth and maturation. Fall Only.

WFA 4183/6183. PRINCIPLES AND PRACTICES OF AQUACULTURE. (3) Prerequisite: BIO 1134 and BIO 1144 or consent of instructor) Two hour lecture. Four hours laboratory alternate weeks. Principles and practices of aquaculture applied to the farming of marine and freshwater species of fish, crustaceans, and mollusks throughout the world. Spring Semesters of Even Years Only.

WFA 4223/6223. WILDLIFE PLANT IDENTIFICATION. (3) (Prerequisite: BIO 1134 and BIO 1144 or equivalent). Two hours lecture. Four hour laboratory alternate weeks. Identification, taxonomy, ecology, and management of wildlife food and cover plants Fall, Maymester (as needed).

WFA 4233/6233. LIMNOLOGY. (3) (Prerequisite: WFA 3133 or consent of instructor). Two hour lecture. Four hour laboratory. The physical, chemical and biological processes underlying the function and productivity of freshwater ecosystems. Fall Only.

WFA 4243. WILDLIFE TECHNIQUES. (3) (Prerequisite: Sophomore standing or consent of instructor). Two hour lecture. Four hour laboratory. Contemporary research and management techniques and tools for wildlife populations and habitats.

Department of Wildlife, Fisheries and Aquaculture

WFA 4253/6253. APPLICATION OF GIS IN WILDLIFE AND FISHERIES. (3) (Prerequisite: Senior standing or consent of instructor). Two hour lecture. Four hour laboratory weekly. Practical application of global positioning systems and geographic information systems to wildlife and fisheries management. (Limited to WFA majors) Spring Only.

WFA 4263/6263. WILDLIFE DISEASES. (3) (Prerequisite: BIO 1134 and BIO 1144 or consent of instructor). Two hour lecture. Four hour laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as CVM 4263/6263). Spring Semesters of Even Years Only.

WFA 4273. ECOLOGY AND MANAGEMENT OF HUMAN-WILDLIFE CONFLICTS. (3) (Prerequisite: WFA 3133 or consent of instructor). Ecological principles and management approaches to resolve human-wildlife conflicts. Fall Semesters of Odd Years Only

WFA 4283. HUMAN-WILDLIFE CONFLICT TECHNIQUES. (3) (Prerequisite: WFA 3133 or consent of instructor). Discussion, demonstration, and application of techniques used to resolve human-wildlife conflicts. Fall Semesters of Odd Years Only.

WFA 4313/6313. FISHERIES MANAGEMENT. (3) (Prerequisite: WFA 3133 or consent of instructor). Two hour lecture. Laboratories alternate weeks. Principles of fisheries management and methods for assessment and analysis of fish populations and aquatic habitats. Fall Only.

WFA 4323/6323. WILDLIFE NUTRITION AND PHYSIOLOGY. (3) Prerequisite: BIO 1134 and BIO 1144, or consent of instructor). Two hour lecture. Four hour laboratory, alternate weeks. Nutrition and physiology of aquatic and terrestrial wildlife, with emphasis on understanding life history strategies and functional adaptations to habitat and environmental variation. Spring Semesters of Odd Years.

WFA 4353/6353. FISH AND WILDLIFE POLICY AND LAW ENFORCEMENT. (3) (Prerequisite: Senior standing or consent of instructor). Three hour lecture. A survey of the major content areas of fish and wildlife policy and law enforcement. Emphasis is on the fundamentals of conservation policies and laws. Fall Only.

WFA 4363/6363. WILDLIFE AND FISHERIES ADMINISTRATION AND COMMUNICATION. (3) (Prerequisite: Junior standing or consent of instructor.). Two hour lecture. Three and one half hour lab, alternate weeks. Administrative and communicational techniques and skills in the workplace and political environments of wildlife and fisheries organizations. Spring Only.

WFA 4373/6373. PRINCIPLES AND PRACTICES OF CONSERVATION IN AGRICULTURAL LANDSCAPES. (3) Two hour lecture. Four hour laboratory, alternate weeks. Introduces theoretical background for ecological conservation in agricultural landscapes with focus on the role of USDA Farm Bill programs in achieving conservation goals. Spring Semesters of Odd Years Only.

WFA 4383/6383. WETLANDS ECOLOGY AND MANAGEMENT. (3) (Prerequisite: WFA 3133 and Junior standing). Two hour lecture. Four hour laboratory, alternate weeks. Hydrology, soils and biogeochemistry of wetlands; structure and function of important wetland types; wetland management for wildlife and fisheries; wetland creation and restoration. Fall Semesters of Even Years Only.

WFA 4393. URBAN WILDLIFE ECOLOGY. (Prerequisites: Junior or higher standing, Grade C or better in WFA 3133, and/or consent of instructor). Three hours lecture. Investigations of traditional wildlife conservation, ecology and management principles as they pertain to urban environments with an emphasis on species natural histories and urban ecosystem characteristics.

WFA 4394/6394. WATERFOWL ECOLOGY AND MANAGEMENT. (4) (Prerequisite: WFA 3133 and Junior standing or consent of instructor). Three hour lecture. Four hour laboratory. Annual ecology of North American waterfowl, habitat and population ecology, and management, waterfowl identification, field trips, management plan, and current issues. Fall Semesters of Odd Years Only.

WFA 4423. HERPETOLOGY. (3) (Prerequisite: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hour lecture. Four hour laboratory, alternate weeks. Evolution, systematics, biology and ecology of reptiles and amphibians. Fall and Spring Semesters.

WFA 4433. MAMMALOGY. (3) (Prerequisite: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hour lecture. Three hour laboratory every week Evolution, systematics, and ecology of mammals, with emphasis on North American groups. Fall Semesters.

Department of Wildlife, Fisheries and Aquaculture

WFA 4443. ORNITHOLOGY. (3) (Prerequisite: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hour lecture. Three hour laboratory every week. Recent and fossil avifauna of the world; its origin, distribution, classification, and biology. Spring Semesters.

WFA 4453. ICHTHYOLOGY. (3) (Prerequisite: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hour lecture. Three hour laboratory. Structure, evolution, classification and life histories of fishes of the world with emphasis on North American freshwater forms. Spring Semesters.

WFA 4463. HUMAN DIMENSIONS OF FISH AND WILDLIFE MANAGEMENT. (3) (Prerequisite: Junior standing or consent of instructor). Three hour lecture. Survey of the major content areas of human dimensions. Emphasis on the considerations and implications associated with measuring, evaluating, and influencing people's attitudes and behaviors. Spring Semesters.

WFA 4473. WILDLIFE AND FISHERIES PRACTICES. (3) (Prerequisite: WFA 3133 and WFA 4153 and Senior standing, or consent of instructor). Two hour lecture. Four hour laboratory. The integration of principles of ecology, wildlife and fisheries techniques and policies for effective planning and implementation of natural resource management. Fall and Spring Semesters.

WFA 4483/6483. SEMINAR IN TROPICAL BIOLOGY. (3) (Prerequisite: WFA 3133). One hour lecture. Four hour laboratory. An introduction to the composition and function of tropical ecosystems of the New World. Listed on the Study Abroad/ Exchange Campus. Spring Semesters of Even Years Only.

WFA 4484/6484. UPLAND AVIAN ECOLOGY AND MANAGEMENT. (3) (Prerequisites: WFA 3133 and WFA 4153 and Junior standing or consent of instructor). Three hour lecture. Four hour laboratory. The application of ecological principles to management of wildlife populations, focusing on avian species and communities inhabiting upland ecosystems. Spring Semesters of Odd Years Only.

WFA 4494/6494. LARGE MAMMAL ECOLOGY AND MANAGEMENT. (3) (Prerequisites: WFA 3133 and WFA 4153 and Junior standing). Three hour lecture. Four hour laboratory, alternate weeks. Ecological principles and applied methods used in the management of large mammals. Fall Semesters of Even Years Only.

WFA 4513/6513. CURRENT TOPICS IN HUMAN-WILDLIFE INTERACTIONS. (3) (Prerequisites: Junior or higher standing, Grade of C or better in WFA 3133, and/or Instructor Consent). Three hours lecture. Investigations and related discussions regarding current topics and past trends in human-wildlife interactions emphasizing the role of wildlife damage management by wildlife biologists. Spring Semesters of Odd Years Only

WFA 4613. LANDSCAPE ECOLOGY. Prerequisite (WFA 3133 and ST 3123 (or equivalents or consent of instructor). Two hours lecture, two hours lab. Foundational concepts and research methods of landscape ecology and application to ecology and management of natural resources. Spring Semesters of Odd Years Only

WFA 4623. CONSERVATION BIOLOGY. Three hours lecture. Theory and applications of conservation biology, measures of biodiversity, ecological geography, measures and treatments of decline. Fall Only.

WFA 4633. PROBLEM SOLVING IN CONSERVATION BIOLOGY. (3) (Prerequisites: WFA4623 or equivalent with instructor consent). Three hours lecture. Upper-level conservation biology course that builds on foundational concepts in lower-level courses in Conservation Biology. Focus on problem-solving of real-world conservation issues in a discussion, case-study, and in-class exercise format. Spring Only.

WFA 4800. UNDERGRADUTE RESEARCH. Hours, credits and deliverables to be arranged. The purpose of this course is to provide a student with the opportunity to participate in research and/or creative project beyond the traditional undergraduate experience.

WFA 4881. CURRENT TOPICS IN CONSERVATION BIOLOGY. (1) (Prerequisites: WFA 3133, Applied Ecology and WFA 4623, Conservation Biology or consent of instructor). One hour lecture. A forum to discuss current literature and theory that advances the study of biodiversity and its application to conservation biology. Fall Only.

WFA 4990/6990. SPECIAL TOPICS IN WILDLIFE AND FISHERIES. (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years). All Terms.

SECTION VI: CFR ADVISOR LIST

FORESTRY				
FACULTY MEMBER	**PHONE**	**OFFICE**	**PRIMARY ADVISING**	**SECONDARY ADVISING**
Grado, Stephen	662.325.2792	357 Thompson Hall	Urban Forestry*	Environmental Conservation
Grala, Robert	662.325.7039	343 Thompson Hall	Forest Business*	Wildlife Management
Granger, Joshua	662.325.0596	321 Thompson Hall	Forest Products*	Forest Management
Grebner, Don (Department Head)	662.325.0928	329 Thompson Hall	Forest Management	Wildlife Management
Himes, Austin	662.325.4249	369 Thompson Hall	Wildlife Management*	Resource Conservation Science
McConnell, Eric	62.325.6340	365 Thompson Hall	Forest Business	Forest Management
Polinko, Adam	662.325.3510	359 Thompson Hall	Forest Management	Environmental Conservation
Poudel, Krishna	662.325.2697	315 Thompson Hall	Forest Management*	Natural Resource Technology
Renninger, Heidi	662-325-0792	313 Thompson Hall	Environmental Conservation*	Wildlife Management
Schulz, Ashley	662.325.5809	375 Thompson Hall	Environmental Conservation	Urban Forestry
Siegert, Courtney (UG Coordinator)	662.325.7481	347 Thompson Hall	Resource Conservation Science*	Environmental Conservation
Silva, Bruno	662.325.6651	345 Thompson Hall	Forest Business	Forest Management
Sun, Changyou	662.325.7271	363 Thompson Hall	Nat. Resource Law & Administration*	Forest Management

***Lead advisor for concentration**

SUSTAINABLE BIOPRODUCTS		
FACULTY MEMBER	**PHONE**	**OFFICE**
Dr. Rubin Shmulsky (Dept. Head)	662.325.2243	203 Franklin Building
Dr. Frank Owens	662-325-6698	109 Franklin Building
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