

**Graduation Composition and Communication Requirement (GCCR)
GCCR PROPOSAL AND CHANGE UNDERGRADUATE PROGRAM FORM**

I. General Information:

College:	<u>Agriculture, Food and Environment</u>	Department (Full name):	<u>Forestry</u>
Major Name (full name please):	<u>Forestry</u>	Degree Title:	<u>Bachelor of Science in Forestry</u>
Formal Option(s), if any:	<u>N/A</u>	Specialty Field w/in Formal Options, if any:	<u>N/A</u>
Requested Effective Date:	<u>FALL 2014, IF RECEIVED BY SENATE COUNCIL BY MONDAY, APRIL 7.</u>		
Contact Person:	<u>Dr. James M. Ringe</u>	Phone:	<u>859-257-7594</u>
		Email:	<u>jringe@uky.edu</u>

II. Parameters of the Graduation Composition and Communication Requirement (GCCR):

The new GCCR replaces the old Graduation Writing Requirement. It is fulfilled by a course or courses specified within a B.A./B.S. degree program. As outlined in draft Senate Rule 5.4.3.1, the GCCR stipulates that students must successfully complete this requirement after achieving sophomore status and prior to graduation. To satisfy the GCCR, students must earn an average grade of C or better on the designated Composition and Communication (C&C) intensive assignments produced in any given course designated as fulfilling some or all of the GCCR. The requirements for GCCR courses include:

- at least 4500 words of English composition (approximately 15 pages total);
- a formal oral assignment *or* a visual assignment;
- an assignment demonstrating information literacy in the discipline;
- a draft/feedback/revision process on GCCR assignments.

The program requirements for the GCCR include:

- at least one specific Program Student Learning Outcome for C&C outcomes;
- a plan for assessing both the writing and oral *or* visual components of the GCCR;
- clear goals, rubrics, and revision plans for GCCR implementation.

Upon GCCR approval, each program will have a version of the following specification listed with its Program Description in the University Bulletin:

“Graduation Composition and Communication Requirement. Students must complete the Graduation Composition and Communication Requirement as designated for this program. Please consult a college advisor or program advisor for details. See also ‘Graduation Composition and Communication Requirement’ on p. XX of this Bulletin.”

III. GCCR Information for this Program (by requirement):

A. List the courses currently used to fulfill the old Graduation Writing Requirement:
<u>FOR 400 Human Dimensions of Forestry and Natural Resources</u>
<u>FOR 470 Interdependent Natural Resource Issues</u>
B. GCCR Program Outcomes and brief description:
1. Please specify the Major/Program Student Learning Outcomes (SLOs) pertaining to Composition & Communication and the GCCR requirement. These are <i>program</i> outcomes, not <i>course</i> outcomes. Please specify the program-level SLOs for C&C in your program:
<u>Graduates will meet the “Communications” General Education Accreditation Requirements of the Society of American Foresters, i.e. they will demonstrate ability to:</u>
<u>a. find, read and interpret professional documents, and critically evaluate opposing viewpoints.</u>
<u>b. communicate information effectively in</u>
<u> i. oral/visual presentations.</u>
<u> ii. writing, on technical / business levels.</u>
<u> iii. writing, on non-professional levels.</u>

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2. Please provide a short GCCR description for your majors (limit 1000 characters): Please explain the GCCR requirement in language appropriate for undergraduate majors to understand the specific parameters and justification of your program's GCCR implementation plan:

FOR 400 - This is a writing-intensive course approved to fulfill the Graduation Composition and Communication Requirement (GCCR) for forestry majors. To receive GCCR credit for this course, you must 1) already have sophomore status, 2) earn an average grade of C or better on the designated Composition and Communication intensive assignments, and 3) complete this course and the other approved GCCR course, FOR 480.

FOR 480 - This is a course approved to fulfill the Graduation Composition and Communication Requirement (GCCR) for forestry majors. To receive GCCR credit for this course, you must 1) already have sophomore status, 2) earn an average grade of C or better on the designated Composition and Communication intensive assignments, and 3) complete this course and the other approved GCCR course, FOR 400.

C. Delivery and Content:

1. **Delivery specification:** for your major/program, how will the GCCR be delivered? Please put an X next to the appropriate option. (Note: it is strongly recommended that GCCR courses be housed within the degree program.)

- a. Single required course within program
- b. multiple required or optional courses within program
- c. course or courses outside program (i.e., in another program)
- d. combination of courses inside and outside program
- e. other (please specify): _

2. **Basic Course Information:** Please provide the following information for course(s) used to satisfy the GCCR, either in whole or in part:

Course #1: Dept. prefix, number, and course title: FOR 400 Human Dimensions of Forestry and Natural Resources

- new or existing course? Existing Course (new courses should be accompanied by a New Course Proposal)
 - if a new course, check here that a New Course Proposal has been submitted for review via eCATS
- required or optional? Yes
- shared or cross-listed course? No
- projected enrollment per semester: 40

Course #2 (if applicable): Dept. prefix, number, and course title: FOR 480 Integrated Forest Resource Management

- new or existing course? Existing Course (new courses should be accompanied by a New Course Proposal)
 - if a new course, check here that a New Course Proposal has been submitted for review via eCATS
- required or optional? Yes
- shared or cross-listed course? No
- projected enrollment per semester: 25

Course #3 (if applicable): Dept. prefix, number, and course title: _____

- new or existing course? _____ (new courses should be accompanied by a New Course Proposal)
 - if a new course, check here that a New Course Proposal has been submitted for review via eCATS
- required or optional? _____
- shared or cross-listed course? _____
- projected enrollment per semester: _____

3. **Shared courses:** If the GCCR course(s) is/are shared from *outside* the program, please specify the related department or program that will be delivering the course(s). Please provide the following:

• **Contact information of providing program:**

• **Resources:** what are the resource implications for the proposed GCCR course(s), including any projected budget or staffing needs? If multiple units/programs will collaborate in offering the GCCR course(s), please specify the resource contribution of each participating program.

• **Memorandum of Understanding/Letter of Agreement:** Attach formal documentation of agreement between the providing and receiving programs, specifying the delivery mechanisms and resources allocated for the specified GCCR course(s) in the respective programs (include with attachments).

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Date of agreement: _____

4. Syllabi: Please provide a sample syllabus for each course that will be designated to fulfill the GCCR. Make sure the following things are clearly indicated on the syllabi for ease of review and approval (check off each):

- the GCCR assignments are highlighted in the syllabus and course calendar;
- the GCCR assignments meet the minimum workload requirements as specified by the Senate Rules for GCCR courses (see the draft Senate GCCR rule linked [here](#));
- the elements are specified in the syllabus that fulfill the GCCR requirement for a clear draft/feedback/revision process;
- the grade level requirements for the GCCR are specified on the syllabus (i.e., an average of C or better is required on GCCR assignments for credit);
- the course or sequence of courses are specified to be completed after the first year (i.e. to be completed after completing 30 credit hours) for GCCR credit;
- the course syllabus specifies “This course provides full/partial GCCR credit for the XXX major/program”
 - if the course provides partial GCCR credit, the fulfilled portion of the GCCR must be specified and the other components of the GCCR for the program must be specified: e.g. “This course provides partial credit for the written component of the GCCR for the XXX major/program in conjunction with Course 2”

5. Instructional plan: Summarize the instructional plan for teaching the C&C skills specified in the program SLOs and delivered in the course(s). Include the following information in **brief** statements (1000 characters or less). Information can be cut-and-pasted from the relevant sample syllabus with indications **where** on the syllabus it is found:

- overview of delivery model: summarize how the GCCR will be delivered for **all** program majors: explain how the delivery model is appropriate for the major/program and how it is offered at an appropriate level (e.g. required course(s), capstone course, skills practicum sequence of courses, etc.):
FOR 400 and FOR 480 together will meet the requirements of the GCCR. FOR 400 was approved under the GWR and meets the written communication and information literacy components of the GCCR. FOR 480 meets the oral communication component of the GCCR. Both courses are upper level required courses in the forestry program.
- assignments: overview or list of the assignments to be required for the GCCR (e.g. papers, reports, presentations, videos, etc.), with a summary of how these GCCR assignments appropriately meet the disciplinary and professional expectations of the major/program:
In FOR 400, students will be required to write a minimum 4,500 word term paper and submit a bibliography. There will be a draft, review, and revision process for this assignment. In FOR 480, students will individually give a ten minute oral presentation in front of faculty, staff, students, and forestry stakeholders. Students will be given feedback on both the content of their oral presentation as well as the delivery of the material.
- revision: description of the draft/feedback/revision plan for the GCCR assignments (e.g. peer review with instructor grading & feedback; essay drafting with mandatory revision; peer presentations; etc.):
In FOR 400, there will be a draft, review, and revision processes that will be used in the course. Examples include peer review of drafts, instructors’ written comments on drafts, and individual student-instructor conferences about drafts. In FOR 480, there will also be a draft, review, and revision processes that will be used to give feedback on the presentation content and delivery.
- other information helpful for reviewing the proposal:

D. Assessment:

In addition to providing the relevant program-level SLOs under III.B, please specify the assessment plan at the program level for the proposed course(s) and content. Provide the following:

- specify the assessment schedule (e.g., every 3 semesters; biennially):
The student learning outcomes will be assessed biennially.
- identify the internal assessment authority (e.g. curriculum committee, Undergraduate Studies Committee):
The student learning outcomes will be assessed by the forestry Undergraduate Program Committee.
- if the GCCR course(s) is/are shared, specify the assessment relationship between the providing and receiving programs: explain how the assessment standards of the receiving program will be implemented for the provided course(s):
n/a

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Signature Routing Log

General Information:

GCCR Proposal Name (course prefix & number, program major & degree):	FOR 400 and FOR 480, Forestry, BS in Forestry
Contact Person Name:	Dr. James M. Ringe
Phone:	859-257-7594
Email:	jringe@uky.edu

Instructions:

Identify the groups or individuals reviewing the proposal; record the date of review; provide a contact person for each entry. On the approval process, please note:

- Proposals approved by Programs and Colleges will proceed to the GCCR Advisory Committee for expedited review and approval, and then they will be sent directly to the Senate Council Office. Program Changes will then be posted on a web transmittal for final Senate approval in time for inclusion in the Fall 2014 Course Bulletin.
- New Course Proposals for the GCCR will still require review and approval by the Undergraduate Council. This review will run parallel to GCCR Program Change review.
- In cases where new GCCR courses will be under review for implementation after Fall 2014, related GCCR Program Changes can still be approved for Fall 2014 as noted "pending approval of appropriate GCCR courses."

Internal College Reviews and Course Sharing and Cross-listing Reviews:

Reviewing Group	Date Reviewed	Contact Person (name/phone/email)
Home Program <i>review by Chair or DUS, etc.</i>	3-21-14 T. Baker	Terrell T. "Red" Baker / 7-7596 / terrellbaker@uky.edu
Providing Program <i>(if different from Home Program)</i>		/ /
Cross-listing Program <i>(if applicable)</i>		/ /
College Dean	3/28/14	Larry J Gvabou / 7-3401 / Larry.Gvabou@uky.edu
		/ /

Administrative Reviews:

Reviewing Group	Date Approved	Approval of Revision/ Pending Approval ¹
GCCR Advisory Committee	4/16/2014	

Comments:

¹ Use this space to indicate approval of revisions made subsequent to that group's review, if deemed necessary by the revising group; and/or any Program Change approvals with GCCR course approvals pending.

Human Dimension of Forestry and Natural Resources: FOR 400
Fall 2013
Course Syllabus

Instructor:

G. Andrew Stainback

Office: T.P. Cooper Building 202

Office Hours: See below

Email: gdrewst02@uky.edu

Telephone: 859-257-1770 (Office) or 518-335-0462 (Cell)

Course Description:

In an issues based format, students will study and write about societal trends and their impact on natural systems, the disconnect between society and nature, wildlife-human interactions, as well as problems related to globalization and urbanization.

This is a writing-intensive course approved to fulfill the Graduation Composition and Communication Requirement (GCCR) for forestry majors. To receive GCCR credit for this course, you must 1) already have sophomore status (completed 30 credit hours), 2) earn an average grade of C or better on the designated Composition and Communication intensive assignments, and 3) complete this course and the other approved GCCR course, FOR 480. This course provides partial credit for the written component of the GCCR for the forestry major in conjunction with FOR 480.

Course Objectives:

1. Increase students' understanding of the impact of various societal trends on natural resource management
2. Acquaint students to the insights and utility of the social sciences as applied to environmental and natural resource issues.
3. Develop students' critical thinking skills
4. This course is a Composition and Communication intensive course and by the end of the course you will be able to successfully:
 - a. Write a paper that is essentially free of mechanical errors (grammar, punctuation, spelling, and syntax) and awkwardness, using a style that is appropriate to the purpose and audience.
 - b. Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area.
 - c. Be aware that composing a successful text frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, and proofreading.
 - d. Write a capable, interesting essay about a complex issue in forestry and natural resources for a general university audience.

Textbooks:

1. Cox, R. (2013). *Environmental Communication*. Thousand Oaks, CA: Sage. ISBN 978-1-41299-9209-1 (This book will be provided free to students via Blackboard)
2. Heberlein, T. A. (2012). *Navigating Environmental Attitudes*. New York, NY: Oxford University Press. ISBN: 978-0-19-97333-6
3. Other readings will be provided to students.

Assignments and Grades:

Classes will primarily consist of short lectures, class discussions, pop quizzes and other class exercises centered around course readings. Readings will be assigned in advance during class. There will be two exams given (Midterm and Final). Each exam will consist of short answer and essay questions.

In addition students will be required to write a term paper (minimum 4,500 words). As part of the term paper assignment students will be required to submit an outline of their paper that also contains a paper proposal with bibliography (~3 pages) and a rough draft. This assignment requires you to demonstrate information literacy in forestry and natural resources. There will be a draft, review, and revision processes that will be used in the course. Examples include peer review of drafts, instructors' written comments on drafts, and individual student-instructor conferences about drafts. More detailed instructions for all assignments will be given in class.

Your course grade will be determined as follows:

Quizzes and class exercises- 30%

Tests – 15% each (30% total)

Term paper

Topic, Outline, Bibliography, Paper Proposal - 10%

Rough Draft - 10%

Final Paper - 20%

To pass this course you must earn an average grade of C or better on the designated Composition and Communication intensive assignments.

Grading Scale: A=90%-100%; B=80%-89%; C=70%-79%; D=60%-69% E=0%-59%

Class Attendance:

There will be valuable content in class discussions that cannot be totally captured on a test or other assignment. Therefore you are expected to attend all classes. You are responsible for all material presented, handouts, announcements and changes in the syllabus whether you are in class or not. During most classes, in addition to class lecture and discussion, there will be a class exercise and/or quiz. Quizzes and class exercises can only be made-up after a valid excuse is provided in writing. Valid excuses include serious illness of you or an immediate family member, death in the family, official university trip, major religious holidays, or other similar circumstances. Makeup quizzes and class exercises will include the quiz/class exercise *and* an

additional assignment. Make-up work must be done within two weeks of returning to class. A make-up exam will be allowed only after you present me with a valid excuse in writing before the test or a valid written medical excuse explaining your illness or that of an immediate family member. I reserve the right to require additional verification before make-up work is allowed. Pop quizzes and class exercises can start at anytime during the class. If you come to class late and miss a quiz or class exercise you will receive a zero for that assignment.

Course Website:

There is a website associated with this course. On this website you will have access to the assigned readings outside of the texts, links to submit your assignments online, an online calendar to book appointments with me, and other resources. You can access this website through Blackboard or directly (<http://for400.weebly.com/>). The password for the site is ukstudent400.

Office Hours:

Interacting with faculty outside of class and getting personalized assistance is an important part of your education. Therefore you are strongly encouraged to meet with me outside of regular class time to discuss your coursework, get career or academic advice, or to discuss other topics of interest. My availability to meet with students is generally very flexible and accommodating. However, my schedule does change throughout the semester. To make meeting with me as easy as possible you will have access to an online calendar through the course website where you can schedule meeting times convenient for you.

Academic Honesty:

All class work is expected to adhere to the highest standards of academic honesty. Cheating and plagiarism will result in a course grade of E. If you have any doubts concerning whether your work conforms to these standards please ask me.

Classroom Etiquette

You are expected to behave in a professional and respectful manner during all class activities. This includes coming to class on time, refraining from the use of electronic devices during class and not disrupting the class in any other manner. Discussion and debate are strongly encouraged to facilitate learning and development of critical thinking skills. However you are expected to be civil and respectful to your fellow students and me during all class discussions. Failure to adhere to any of the above requirements can result in dismissal from class or being dropped from the course.

Students with Disabilities:

Students with disabilities should contact the Disability Resource Center to arrange for appropriate accommodations. Website:

<http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/contact.html>

Telephone: (859) 257-2754

Course Content:

I. Societal Trends and Natural Resource/Forest Management

- a. Population Growth
 - b. Economic Growth and Consumption
 - c. Urbanization
 - d. Globalization
- II. Natural Resource/Environmental Communication and Public Discourse
 - III. Public Participation in Natural Resource and Environmental Decision Making
 - IV. Managing Conflict over Natural Resource Management
 - V. The Role of Social Science in Natural Resource and Forest Management

Both the content and structure of the class may be modified as the need arises.

Integrated Forest Resource Management

FOR 480 – 5 credits

Spring 2014

Time and Place: 8:00 am - 6 pm Tuesdays, T.P. Cooper Room 220

Instructors: Dr. John Lhotka Office: 210 T. P. Cooper
Office Phone: 257-9701
Email: john.lhotka@uky.edu
Office Hours: By appointment

Dr. James Ringe Office: 108 T.P. Cooper
Office Phone: 257-7594 Email: jringe@uky.edu
Office Hours: By appointment

Course Website: www.uky.edu/~jmlhot2/courses/for480/for480.htm

Course Description

This is the other capstone course in the forestry curriculum. Students will be presented with a real life management scenario in a forested location in Kentucky. Working in teams, students will collect data, determine management objectives, and develop action plans for managing the forest according to the desires of the owner, subject to realistic legal, economic, ethical, and social constraints. Students will be required to produce a professional management plan and present the plan in a public forum at the end of the semester. *Prerequisites: Completion of Field Semester, FOR 425, FOR 460, and Senior Standing.*

This is a course approved to fulfill the Graduation Composition and Communication Requirement (GCCR) for forestry majors. To receive GCCR credit for this course, you must 1) already have sophomore status (completed 30 credit hours), 2) earn an average grade of C or better on the designated Composition and Communication intensive assignments, and 3) complete this course and the other approved GCCR course, FOR 400. This course provides partial credit for the written component of the GCCR for the forestry major in conjunction with FOR 400.

Student Learning Outcomes

At the end of this course, the student will be able to demonstrate the following skills.

1. Relate knowledge of forestry concepts with information collected on a forested property to design and implement a comprehensive inventory proposal, including a description of a property's biophysical properties and historical and present land use by using land records and legal descriptions.
2. Relate knowledge of forestry concepts with information collected on a forested property to develop a detailed management prescription incorporating the landowner's objectives and administering the objectives in light of ethical forestry and stewardship guidelines.

3. Demonstrate effective interaction skills and professional conduct with various types of landowners and the public.
4. This course is a Composition and Communication intensive course and by the end of the course you will be able to successfully:
 - a. Give a presentation that is free of errors and awkwardness, using a style that is appropriate to the purpose and audience.
 - b. Demonstrate an ability to discover, evaluate, and clearly present evidence in support of an argument in the subject area and utilize documentation that conforms to the formats and the citation conventions of the subject area.
 - c. Be aware that composing a successful presentation frequently takes multiple drafts, with varying degrees of focus on generating, revising, editing, proofreading, and practicing.
 - d. Give a presentation on a forest management plan for a general audience.

Grading and Attendance

Groups (3 to 5 people) will be graded on how well they demonstrate the breadth and depth of their professional competence in required assignments. 10% of a student's final course grade will be based upon peer review evaluations of a student's contribution to each group assignment. The average peer evaluation scores from all assignments will be the student's peer review grade for the semester. Students will be informed of their current progress based on the criteria in the syllabus before the midterm date of the semester (i.e., midterm grades will be given).

To pass this course you must earn an average grade of C or better on the designated Composition and Communication intensive assignments.

Course grades will be awarded as follows:

- A: 90 to 100%
- B: 80 to 89%
- C: 70 to 79%
- D: 60 to 69%
- E: < 60%

Two printed copies of each assignment must be turned in to the instructors by the specified due date and time. The penalty for late submission is 10% of the possible score per calendar day. All reports must be typed and include page numbers.

All group writing assignments will be submitted twice, and the initial submission and revised submission will be graded by course instructors. The revised submission of each assignment must be accompanied by the initial submission copy containing the instructors' grading comments. The final grade for each assignment will be calculated using the following formula:

$$\text{Initial}_{\text{Grade}} + 0.75(\text{Revised}_{\text{Grade}} - \text{Initial}_{\text{Grade}})$$

Revised assignment submissions which do not address deficiencies outlined in the instructors' grading comments will result in a zero for the final assignment grade.

Attendance is mandatory and will be taken each day of class at 8:00 am. University of Kentucky S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: a)

serious illness; b) illness or death of family member; c) University-related trips; d) major religious holidays; e) other circumstances the instructor finds to be "reasonable cause for nonattendance". When feasible, the student must notify the Instructor of Record prior to the occurrence of such absences, but in no case shall such notification occur more than one week after the absence. If a student has unexcused absences in excess of 8 class contact hours, a student's final grade will be reduced by 10% points. Following unexcused absence of 8 contact hours, a student's grade will be reduced by an additional 10% for each additional unexcused absence of 8 contact hours.

In addition to the course assignments, students are required to take the departmental exit exam which facilitates assessment of the department's undergraduate curriculum under the direction of the University of Kentucky's administration guidelines. Participation in this exam is mandatory, but the exam is not part of your course grade. The date of the exam is TBA.

University of Kentucky Policy on Plagiarism and Cheating

Plagiarism and cheating are serious academic offenses. The University regulations pertaining to these matters can be found at <http://www.uky.edu/StudentAffairs/Code/>

Of particular relevance is Part II, SELECTED RULES OF THE UNIVERSITY SENATE GOVERNING ACADEMIC RELATIONSHIPS, Section 6.3 that can be found at <http://www.uky.edu/StudentAffairs/Code/part2.html>

Equipment

Each student will be held responsible for equipment checked out at the beginning of the semester. If the equipment is lost or broken, students will be responsible for replacing the item. Students are **required** to wear orange vests while in the field.

Professional Conduct

Students will be expected to treat this course as though it were their first professional job in forestry. Students must attend all classes and be on time. Student conduct with peers in the field, landowners, and instructors is expected to be ethical, responsible, and reflect the highest professional standards.

Instructors will be available to students during the scheduled class and by appointment. Should you need assistance from course instructors outside the scheduled class period or require assistance from other departmental faculty, you need to schedule a formal appointment with the individual via email.

FOR 480 - Tentative Course Schedule (Spring 2014)

Class Meeting		Topic	Assignment
1	January 21	Class Overview, Meet Landowner, Stand Delineations	-
2	January 28	Preliminary Cruise	-
3	February 4	Field Data Collection	Landowner Description and Inventory Methods (Initial Submission) Due: Feb. 4, 8 am
4	February 11	Field Data Collection	-
5	February 18	Field Data Collection	Landowner Description and Inventory Methods (Revised Submission) Due: Feb. 18, 8 am
6	February 25	Field Data Collection Inventory Processing	-
7	March 4	Inventory Report Preparation	Inventory Report (Initial Submission) Due: Mar. 4, 6 pm
8	March 11	Inventory Report Revisions	-
9	March 18	Spring Break	-
10	March 25	Management Approach Preparation *Departmental Exit Exam	Inventory Report (Revised Submission) Due: Mar. 25, 8 am
11	April 1	Management Approach Preparation	-
12	April 8	Management Approach Preparation	Description of Management Approach (Initial Submission) Due: Apr. 8, 6 pm
13	April 15	Preparation of Group Presentation *Exit Interviews and Lunch	-
14	April 22	Practice Group Presentation	Group Presentation Slides Due: Apr. 22, 8 am
15	April 29	Practice Group Presentations	Presentation of Management Plan Due: Thursday, May 1, 1:00 pm
16	May 6	Finals Week	Course Portfolio including Final Submission of Management Approach Due: Wed., May 7, 4 pm

*Required by University and/or Departmental Policies

Description of Group Assignments

Group assignments for the course are designed to incrementally develop a forest management plan for the project property.

A forest management plan is a guide and a tool to help landowners make decisions, look at their options, and plan for the future. The plan may need to be modified as ownership goals, objectives, and site conditions change over time. Forest management planning includes three important steps: 1) Determine where a landowner wants to be in terms of their forest resources and property, 2) Determine the state of the forest resources and property in terms of the landowner goals and objectives, 3) Develop management practice recommendations that address landowner goals and objectives and that include a specific activity schedule that lays out how, when, and where to implement specific actions and how those actions relate to landowner goals and objectives.

A forest management plan should include:

1. Ownership goals and management objectives: this is the heart of the plan and describes what landowners want to gain from their property and resources.
2. Maps: help to describe the property and resources
3. Property boundary description: a legal description of their property location and acreage.
4. Resource inventory data: descriptions of water bodies, wildlife, vegetation, soils, topography, access, and other non-market values. Timber inventory data should include information on the species, size, quality, quantity, and value of timber; stand structure and condition; and the presence and extent of forest health issues.
5. Management recommendations: detailed management options and how they relate to ownership goals and objectives. Descriptions should clearly present the silvicultural and economic/ecological basis for the presented management options.
6. Activity schedule for recommendations: specifies a timeline for management activities and subsequent monitoring and reevaluation.
7. Examination of costs of different management options and their potential returns.

Assessment of the property should start with delineation of stands followed by a forest resource inventory. A critical step in any forest inventory is to determine the cruise procedures and sampling intensity necessary to generate the desired information. In order to do so, some preliminary data about the property is needed. A preliminary cruise will help you familiarize yourself with the property and obtain the initial data to plan the final inventory. Cruise procedures should be developed before beginning the preliminary cruise. Preliminary cruise methodology should match those you expect to use for your final cruise. All crewmembers must follow the same sampling and cruise procedures.

In the preliminary cruise, groups should measure enough plots to sample at least 1% of the total property acreage. Plots should be located so that all stands on the property are sampled **with at least 3 plots**. Groups should use the preliminary cruise data to calculate the number of plots needed to achieve a +/- 10% allowable error at the 95% confidence level for **tract total** board foot volume per acre. If stands do not include sawtimber sized trees, groups should calculate the number of plots needed to achieve a +/- 10% allowable error at the 95% confidence level for

basal area (ft²) per acre. Data from preliminary plots should be used as part of the final inventory and preliminary plots should be included in the total number of plots needed for the final inventory.

During your field survey, note the location of any significant existing conditions (i.e. old roads, trails, severely eroded lands, highly erodible soils, etc) requiring Best Management Practices (BMP) implementation. Location, type, and extent of invasive plant species must also be documented, so appropriate control measures and costs can be given to the landowner. An evaluation of wildlife habitat potential is also required and should include documentation of habitat indicators such as snag size and density, downed woody debris, and density/basal area of mast species. Also consider the hydrologic system on the tract as for your inventory report you will need to identify and map all hydrological channels and estimate their flow duration (perennial, intermittent, ephemeral), identify and evaluate potential wetlands (based hydrology, soils, and vegetation), delineate watersheds, report slope and elevations, and specify where streamside management zones (SMZ) and buffers for sensitive areas (e.g., cliff lines, wetlands, sinkholes, threatened and endangered species habitat, cultural sites) are needed. If possible, consider collecting water samples for water quality analysis.

Assignment 1: Landowner Description and Inventory Methods (20%)

Assignment should include the following information:

1. Description of the landowner characteristics particularly relevant to the management of the property.
2. History of the property including ownership history, current and past land-uses, summary of past harvests or natural disturbances.
3. Detailed list of the landowner's objectives for the forest property including a discussion of any constraints (e.g., legal, biological, economic, social, access, etc.) that may limit achievement of these objectives. These objectives will serve as the underlying framework for the management plan.
4. Description of the property location and justification for stand delineations are required. Maps depicting general property location, property boundary, and stand boundaries must also be included.
5. Provide a detailed description of inventory methodology for the preliminary and final cruise. This description should document methods used for tree (dbh \geq 1") inventories as well as other resources such as forest regeneration (dbh < 1"), wildlife habitat components, and invasive species. The assignment should also outline how forest health indicators (insects and disease), road and trail networks, the hydrologic system, cultural sites, and sensitive habitats were evaluated and documented for the property. Provide enough detail so that a person outside your crew could cruise the tract in exactly the same manner, collecting the same data in exactly the same format. Specify what data will be collected at each plot. Define

all inventory criteria such as units of measure, product groups, product class specifications, species, and species groups. Be sure to include a justification of why you selected a particular inventory methodology and why the suite of plot measures you will take is needed.

6. A summary of the preliminary cruise results including a table presenting acreage, tree density (stems ≥ 1 " dbh), basal area (stems ≥ 1 " dbh), and the mean, standard error, and coefficient of variation (CV) for board-foot volume by stand and tract (See Appendix A1 for a suggested table format).
7. State the sampling design (e.g., simple random, stratified random, stratified systematic) used for the inventory and specify the number of final cruise plots necessary to meet a +/- 10% allowable error at the 95% confidence level for **tract total** board foot volume per acre. Detail how the required number of plots was determined (i.e., show calculations).
8. Summary of the preliminary and final cruise plot layout including the number and distribution of plots. Maps depicting actual locations of preliminary cruise plots and planned locations for plots in the final inventory are required.
9. Completed "Stand Evaluation Form" for each stand within the tract

Assignment 2: Forest Inventory Report (20%)

Inventory the property following the inventory procedures developed in the Inventory Methods. The Forest Inventory Report should be organized as follows:

1. Description of property's biophysical attributes

Provide a description of the property's geology, soils with discussion of potential management implications, topography with slope and elevation ranges, watershed delineations, and delineation of stands. Include a narrative description of the property and include property level maps. Be sure to include maps depicting stand boundaries, watershed boundaries, and transportation system.

2. Results of Resource Inventory

Property Level Results

For the inventory, present a narrative description of the property level results including such information as acreage, species composition, basal area (stems ≥ 1 " dbh), tree density (stems ≥ 1 " dbh), volume by product class, and value of standing timber. A table summarizing density, basal area, board feet volume per acre, and value by product group (i.e., sawtimber, poletimber, small trees, advance reproduction) for entire tract must be included. Additionally, provide a property-level summary for non-timber resources such as invasive species, wildlife (snags, downed woody debris, density/basal area of mast species), hydrology, road and trail systems, forest health indicators, cultural sites, aesthetics, and recreation. Identify and map all hydrological channels and estimate their flow duration

(perennial, intermittent, ephemeral). Potential wetlands should be identified based on evaluation of hydrology, soils, and vegetation. Specify where streamside management zones (SMZ) and buffers for sensitive areas (e.g., cliff lines, wetlands, sinkholes, threatened and endangered species habitat, cultural sites) are needed. If applicable, provide results from water quality analysis. Also, denote the location of any significant existing conditions (i.e. old roads, trails etc.; severely eroded lands) requiring BMP implementation. Be sure to include the location of SMZs and buffers for sensitive sites on a map.

For all merchantable stands combined, report the margin of error for volume at the 95% confidence level. Show your calculations. Was the desired accuracy of +/- 10% achieved? If not, why not? Include a table summarizing the statistical accuracy of the inventory for volume on the entire tract including the mean, standard error, and coefficient of variation for board-foot volume by stand and tract.

Stand Level Results

Narrative descriptions of **each stand** are also required. This description should present the primarily characteristics of each stand. Include summary tables of inventory statistics for each stand. Highlight key statistics from the tables in the narrative stand descriptions. The following data must be provided for each stand:

1. Tree density (number ac^{-1}), basal area ($\text{ft}^2 \text{ac}^{-1}$), and quadratic mean diameter including all stems $\geq 1''$ dbh
2. Species composition represented as a percentage of tree density and basal area
3. Tree density (number ac^{-1}), basal area ($\text{ft}^2 \text{ac}^{-1}$), and quadratic mean diameter by sawtimber, poletimber, and small tree product groups.
4. Stocking percentage (including stems $\geq 5''$ dbh)
5. Tree density (number ac^{-1}) and basal area ($\text{ft}^2 \text{ac}^{-1}$) by diameter class including all stems $\geq 1''$ dbh
6. Total sawtimber volume (board-foot ac^{-1}) and sawtimber volume (board-foot ac^{-1}) by grade
7. Stand value (value ac^{-1} and total value)
8. Tree density (number ac^{-1}), basal area ($\text{ft}^2 \text{ac}^{-1}$), quadratic mean diameter, and sawtimber volume (board-foot ac^{-1}) for acceptable and undesirable growing stock by sawtimber, poletimber, and small tree product groups
9. Density of forest reproduction by species and height class

Also, include a stand-level summary of non-timber resources that may have a significant impact on the management of a given stand. For example, if a stand has a significant invasive species problem when compared with the rest of the tract, you would want to describe the extent of the problem within that stand.

Students **MUST** also submit an electronic copy of the TwoDog .JOB folder used in the preparation of the Inventory Report assignment.

Assignment 3: Description of Management Approach (25%)

The following outline provides a framework for your Description of Management Approach.

- A. Introduction: - Identify the property in question and purpose for the management plan. Preview how the document is assembled and works. Clearly state what time period this document covers, i.e., what is the planning horizon?
- B. Description of management prescriptions designed to achieve each landowner objective including discussion of short-term (1 to 5 years) and long-term (10 to 20 years) stand-level management. Detailed prescriptions for each stand should be included.

In this section, groups should describe the stand-level management regimes prescribed to meet landowner objectives and **clearly present the silvicultural and economic basis for the presented management regimes**. Be sure to provide a thorough description of all aspects of the management activities and include enough "how to" detail so that another professional could implement each activity. Desired future conditions of stands based upon landowner objectives should also be stated. Make sure to include strategies to achieve non-timber objectives that cannot be met through silvicultural techniques or must be implemented at a sub-stand level. Predict and describe changes in the stand through time following the prescribed activities. Discuss the implications of the changing stand structure and composition as related to the objectives.

Describe the necessary steps to implement the management plan and include a unified master schedule showing all activities occurring, their locations, costs, and anticipated revenues by stand. Twenty years is a suitable planning period for the Central Hardwood Region. The implementation schedule will provide highly detailed information on an annual basis for all activities occurring within the first five years. For the remainder of the planning period, the plan may be more general, summarizing projected activities on a five or ten year period basis.

Following the Best Management Practices (BMP) recommendations in the Kentucky Forest Practice Guidelines for Water Quality Management, discuss the implication of management recommendations on soil and water resources. State the BMPs that are needed to comply with the Kentucky Forest Practice Guidelines. Consider roads and trails, timber harvesting, stream side management zones (SMZ), buffers for sensitive areas (cliff lines, wetlands, sinkholes, threatened and endangered species habitat, cultural sites).

- C. Monitoring and reevaluation plan

Develop an inventory protocol that can be used to evaluate the impact of prescribed management practices on the response of the forest. Explain what measures should be used to determine if the scheduled activities are in fact progressing towards the landowner's objectives. Set up criteria for determining success and a timetable for monitoring the performance of the plan. For example, a monitoring plan for an oak

shelterwood treatment would include post-harvest regeneration surveys to determine the size and density of advance oak reproduction. Further action, such as a release treatment, would be based upon data collected by this monitoring.

D. Financial analysis and appraisal of the current market value of the property

The economic summary must include the present value of the standing timber and a cash flow statement. For the purpose of this report, the value of the timber is based on inventoried volume and current market prices. The cash flow statement reports the total revenues, total costs, and total net revenues for each year in the planning period and reports the cumulative net revenues annually and at the end of the planning period. Costs include such items as forest management costs, BMP implementation, habitat improvement, and road building and maintenance. Revenues include items such as timber receipts, payments from governmental programs, and hunting lease payments.

E. Conclusion: Reiterate the main points of the preceding sections that may affect the landowner's decision to adopt the proposed management plan. Summarize the predicted results from following this plan of action in terms related to the owner's objectives. Signal a definite end to the document.

F. Literature Cited: All source documents used in the preparation of the management plan must be cited at the appropriate points throughout the document and listed in a "Literature Cited" page. Refer to Appendix A3 for further detail on literature citations.

G. Appendices: The appendices are important elements of the plan, should be neatly organized, and should be preceded by a table of contents. In the appropriate appendix, explain how the key elements of the plan were developed. All information crucial to the development of the plan but too detailed or tedious for inclusion in the plan itself must be included in an appendix.

Assignments 4 and 5 - Group Presentations:

- **Presentation Slides (10%)**
- **Oral Presentation (15%)**

Each team will present their plan to the class, faculty and staff, and their landowner at the end of the semester. The presentation must summarize the key elements of the plan. All team members must participate in the presentation and each person must present for at least 10 minutes. Audio-visual aids are required. Presentations should last no more than 50 minutes with an additional 10-15 minutes for questions. Student presentations will be evaluated based on their effective use of verbal and nonverbal delivery techniques, identification of the major and minor components of the management plan, use of credible sources, development of logical management prescriptions, and response to audience participation.

There will be a draft, review, and revision processes that will be used to prepare for the presentations.

Course Portfolio: Due May 7, 4 pm

At the conclusion of the semester, each group is required to submit **two** final hardcopies of all course assignments within course portfolios (i.e., assignment 3-ring binder). The final course portfolio must also be submitted electronically to Dr. Lhotka. One purpose of submitting the course portfolios is to allow these student management plans to be submitted to the landowner of the project property as well as to be archived by the UK Department of Forestry. The second purpose is to allow groups to submit the revised version of their Description of Management Approach assignment. Failure to submit a completed assignment portfolio to Dr. Lhotka by the specific due date will result in an “T” in the class. Incomplete assignment portfolios and assignment portfolios that do not adhere to the specified format will not be accepted.

The completed course portfolio must include the following items:

1. Title Page: - Should include a descriptive title, landowner name, crewmember’s names, course name and number, instructor’s name, date submitted.
2. Table of Contents: - This is a numbered list of sections and appendices and associated page numbers.
3. List of Tables and List of Figures: - These are numbered lists for each category with the associated page numbers. Complete titles or headings should be included in the lists. Figures and summary tables should be integrated in the body of the management plan.
4. Landowner Description and Inventory Methods Assignment (Final Version)
5. Inventory Report Assignment (Final Version)
6. Description of Management Approach Assignment (Final Version to be Graded)

Appendix A

Presentation of Tables, Figures, and Literature Cited

One critical component to the preparation of any technical document is to ensure that its layout and formatting results in clearly presented information. You do not want the presentation of the material to get in the way of the reader comprehension. Hence, all assignments in FOR 480 must use the style guidelines presented here for tables, figures, and literature cited.

A.1 Tables

Tables should be reference in the text and should utilize the following format. Note a descriptive title is included above the table and the table does not incorporate excessive cell borders. Here is an example of how a table is referenced in the text: “Inventory data show that the board foot volume of Stand B was lower than all other stands on the tract (Table 1).” Presented below is an example table and descriptive table title.

Table 1. Area (acres), basal area ($\text{ft}^2 \text{ acre}^{-1}$), density (trees $\text{ac}^{-1} \geq 1''$ dbh), and mean, standard error, and co for board-foot volume acre^{-1} by stand and tract for the Henry Lightcap property

Stand	Area (acres)	Basal Area ($\text{ft}^2 \text{ acre}^{-1}$)	Density (trees acre^{-1})	Board-Foot Volume (acre^{-1})		
				Mean	SE	CV
Stand 1	10	77.0	1065.2	981.6	244.8	78.9
Stand 2	18	82.7	696.9	2017.9	374.4	64.3
Stand 3	48	95.7	378.2	3859.7	243.4	41.8
Property Total	76	90.2	544.1	3044.8	180.4	48.1

A.2 Figures

Figures should be referenced in the text and should utilize the following format. Note a descriptive title is included below the figure. Please note that graphs, maps, and pictures are all considered figures in technical documents and should each utilize the same title heading “Figure”. Here is an example of how a figure is referenced in the text: “Diameter distribution on the Henry Lightcap Property appears to follow a reverse J-shaped distribution (Figure 1).” Presented below is an example figure and descriptive figure title.

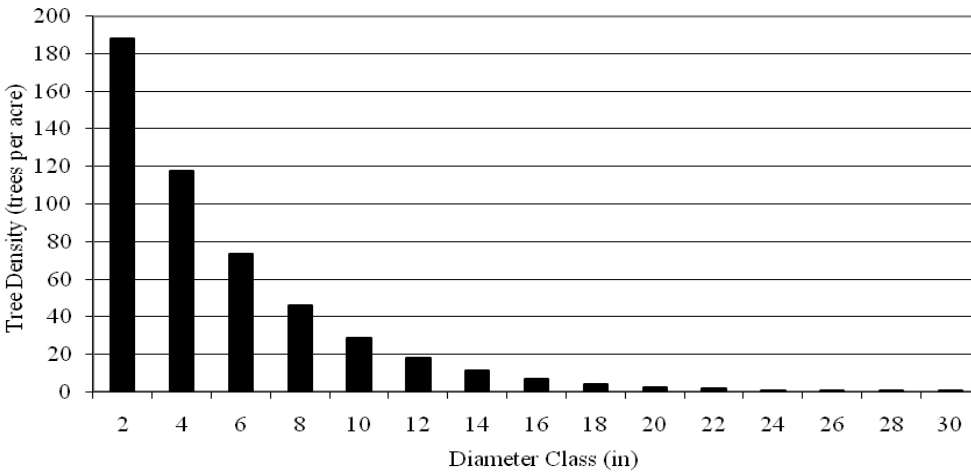


Figure 1 Diameter distribution for all species in Stand A on the Henry Lightcap property

A.3 Literature Cited

Each document cited should be referenced in the text using the following format, (Author(s) Year). All literature cited should utilize the following citation formats at the end of the document.

Book:

Daniel, T.W., J.A. Helms, and F.S. Baker. 1979. Principles of silviculture. McGraw-Hill Book Company, New York, NY. 500 p.

Journal Article:

Dey, D.C., and W.C. Parker. 1997. Overstory density affects field performance of underplanted red oak (*Quercus rubra* L.) in Ontario. *Northern J. Appl. For.* 14(3):120-125.

Government Document:

Weigel, D.R., and P.S. Johnson. 1998. Planting white oak in the Ozark Highlands: a shelterwood prescription. USDA For. Serv., North Central Forest Experiment Station, TB-NC-5. 8 p.

Conference Proceedings:

Lhotka, J.M., and J.J. Zaczek. 2003. The development of oak reproduction following soil scarification - implications for riparian forest management. P. 199-202 *in* Proceedings 13th Central Hardwood Forest Conference, Van Sambeek, J.W., J.O. Dawson, J. Ponder, F., E.F. Loewenstein, and J.S. Fralish (eds.). USDA Forest Service, North Central Research Station, General Technical Report NC-234, St. Paul, MN.

Website:

National Climatic Data Center. 2006. National Climatic Database. U.S. Department of Commerce, National Climatic Data Center, Asheville, NC, www.ncdc.noaa.gov/oa/ncdc.html.

A.4 Spring 2014 FOR 480 Capstone Project Groups

- **Basin Mountain**
 1. David Cox
 2. Blake Grigsby
 3. Anderson Mars
 4. Reece O’Nan
 5. Mathew Wright

- **Horse Cove North**
 1. Hannah Angel
 2. Brandon Myers
 3. Nathan Rodgers
 4. Matthew Savage

- **Horse Cove South**
 1. Kayla Hall
 2. David Jones
 3. Wells Lawless
 4. Andrew Nielsen
 5. Kayla Price

- **Robe Hollow**
 1. Robbie Atha
 2. James Baunach
 3. Rhett Hundley
 4. D.J. Newton
 5. Logan Nutt

Addendum to Forestry's GCCR Proposal
Writing, Review and Revision Schedule for FOR 400

Important Due Dates:

September 27: Paper Topic, Preliminary Bibliography, Reflective Statement for Term Paper. *To be reviewed by instructor and returned to students with comments for revision within 2 weeks.*

November 8: Rough Draft of Term Paper incorporating revisions from instructor review. *To be reviewed by instructor and returned to students with comments for revision within 2 weeks.* GCCR fulfillment.

December 13: Final, revised copy of term paper incorporating revisions from instructor review. GCCR fulfillment.