

University of Florida
Food and Resource Economics Department

AEB2451 Economics of Natural Resource Use

Updated: August 1, 2024

Fall Term 2024
Class Number: ONLINE
3 Credit Hours

Online *100% asynchronous* course delivery via Canvas

Instructor and Contact Information

Instructor: Dr. Mikael Sandberg
(*Faculty member and Associate Department Chair in the Department of Economics at the University of South Florida in Tampa*)

Office Hours: Tuesday and Thursday 9:30 – 11:00am. Other times by appointment. Virtual Office Hours using Zoom – use Canvas for access.

E-mail: sandberg1@usf.edu

E-mail is an efficient and fast way to ask questions! When e-mailing me, please indicate in which class you are enrolled (e.g., AEB2451, Economics of Natural Resource Use, UF class, or something similar) so that I can more effectively address your concerns. Courteous and professional e-mails can expect a *prompt* reply (usually within 24 hours – often times in considerably less time). Please do NOT use my old UF Gatorlink account (it is still accessible in some e-mail directories). **For quickest response use my USF e-mail: sandberg1@usf.edu.**

FRE Undergraduate Advisor: Mr. Trey Gifford; 1170B McCarty Hall A; (352) 294-7640;
E-mail: agifford1@ufl.edu

FRE Undergraduate Coordinator: Dr. Misti Sharp; 1189 McCarty Hall A; (352)294-7632;
E-mail: mistisharp@ufl.edu

FRE Technology Assistance: Mr. Dave Depatie; 1197 McCarty Hall A; (352) 394-7641;
E-mail: ddepatie@ufl.edu

E-Learning Canvas: There is a Canvas page for this course that can be accessed via <http://elearning.ufl.edu>. If you are having difficulties accessing E-Learning, please contact the UF Computing Help Desk by calling (352) 392-HELP or e-mail helpdesk@ufl.edu, or visit <https://helpdesk.ufl.edu/>. You will need your UFID/Gatorlink information when contacting them.



General Course Information

Course Description (from UF Catalog): Introduces how economists value the environment and regulations designed to protect our natural resources from overuse and degradation. (S)

This course meets the General Education Student Learning Outcomes for the Social Science (S) Designation. You must earn a C or better to get General Education Credit. See General Education Learning Outcomes here:

<https://undergrad.aa.ufl.edu/general-education/gen-ed-courses/structure-of-gen-ed-courses/slos-and-performance-indicators/student-learning-outcomes/>

This is a course that applies economic tools and methods to the analysis of environmental and natural resource related problems.

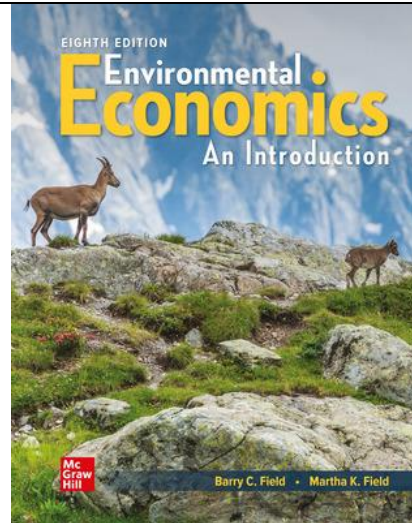
General Education Course Objectives
<p>Content: <i>Identify, describe and explain key themes, principles, and terminology; the history, theory and/or methodologies used; and social institutions, structures, and processes.</i></p> <ul style="list-style-type: none"> • Define the economic terminology used in environmental and natural resource economics • Identify the causes of environmental and natural resource related societal problems • Explore various public policy approaches available to deal with aforementioned environmental and natural resource related societal problems • Discuss global issues pertaining to the discipline <p>Mastery will be achieved through lectures, readings, homework assignments, and quizzes.</p>
<p>Critical Thinking: <i>Apply formal and informal qualitative or quantitative analysis effectively to examine the processes and means by which individuals make personal and group decisions. Assess and analyze ethical perspectives in individual and societal decisions.</i></p> <ul style="list-style-type: none"> • Apply economic theory in explaining environmental problems resulting from consumption and private business activity • Use economic tools and methods in analyzing the use (and overuse) of natural resources • Examine the role of externalities and public goods and resulting market failure • Debate the impact of globalization on our environment and natural resource use <p>Objectives will be accomplished via lectures, readings, homework assignments, quizzes, and End-of-Semester Project</p>
<p>Communication: <i>Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).</i></p> <ul style="list-style-type: none"> • Communicate in written form the analysis of environmental and natural resource related problems • Evaluate various policy approaches in dealing with these societal issues • Conclude educational experience in the course by combining the theories and methods in a written report <p>Assessed through homework assignments and end-of-semester assignment</p>

Required Text and Materials:

Environmental Economics: An Introduction, 8th Edition, by Barry Field and Martha K Field. McGraw Hill. 2021.

The following options are available:

- Hardcover. ISBN: 9781260243062.
- Loose-leaf. ISBN: 9781260993172.
- Electronic Access: ISBN: 9781264383979.
- Rental book. ISBN: 9781260243062.



Content is identical across options. Students are encouraged to acquire the book in the format that best suits their needs, learning style, and budget. All students will need access to the textbook.

Prerequisites: None

Course Delivery and Semester Schedule

Class Delivery: AEB2451 is taught as *on-line 100% asynchronous course*. **All required class activities and assessments take place online using Canvas.** Thus, there are no physical in-class activities or specific times when you must be logged on for lectures – there are timed quizzes, however that do require you to log on before a certain deadline (more about this later). I am available via e-mail or virtual office hours if you ever have any questions or concerns about the course.

Module Structure: AEB2451 will be delivered by the use of modules in Canvas. There are a total of seven (7) *Academic Modules* throughout the term (*Module 1 through 7*), please see the Semester schedule on the next page. You can also find a copy of this schedule posted on Canvas.

Each module roughly corresponds to two weeks of work. In addition, there is an *Introductory Module (Module 0)* pertaining the course syllabus, course delivery, and technical information about the course. There is also a final concluding module at the end of the semester (*Final Module*) that wraps up the course. It is strongly recommended that you read the assigned chapter in the textbook prior to each module. This course will follow the textbook pretty closely.

At the end of each regular *Academic Module (Module 1 through 7)* there is a Homework Assignment and a graded quiz. The homework and the quiz are pertaining to the material covered in that particular module. Consequently, there are seven (7) graded homeworks and seven (7) graded quizzes.

Homeworks are always due on the *Wednesday during the second week of the module* no later than 11:59pm EST. All homeworks are to be uploaded in Canvas. Quizzes are due on the *Sundays during the second week of the module* on the second week of the at 11:59pm EST. These deadlines are firm and you should make a note of these for ready access. Canvas also provides detailed information about when each Homework Assignment is released. On the following page you find a week-by-week semester schedule along with due dates.

Week	Dates	Chapters and Topics
Module 0: Introduction Module		
1	Aug 22 – Aug 23	Syllabus and Introduction to the Course Syllabus Quiz (ungraded) due before you can proceed to Module 1
Module 1: Economic Tools and Methods		
2	Aug 26 – Aug 30	Ch 1: What is Environmental Economics? Ch 2: The Economy and the Environment
3	Sep 2 – Sep 6	Ch 3: Benefits and Cost, Supply and Demand Homework 1: Due Wednesday September 4 11:59pm EST Quiz 1: Due Sunday September 8 11:59pm EST
Module 2: Markets, Externalities, and Environmental Quality		
4	Sep 9 – Sep 13	Ch 4: Markets, Externalities, and Public Goods
5	Sep 16 – Sep 20	Ch 5: The Economics of Environmental Quality Homework 2: Due Wednesday September 18 11:59pm EST Quiz 2: Due Sunday September 22 11:59pm EST
Module 3: Framework of Benefit Cost Analysis		
6	Sep 23 – Sep 27	Ch 6: Framework of Analysis
7	Sep 30 – Oct 4	Ch 7: Benefit-Cost Analysis: Benefits Homework 3: Due Wednesday October 2 11:59pm EST Quiz 3: Due Sunday October 6 11:59pm EST
Module 4: Costs, Evaluation, and Decentralized Policies		
8	Oct 7 – Oct 11	Ch 8: Benefit-Cost Analysis: Costs Ch 9: Criteria for Evaluating Environmental Policies
9	Oct 14 – Oct 18	Ch 10: Decentralized Policies: Liability Laws, Property Rights, and Voluntary Action Homework 4: Due Wednesday October 16 11:59pm EST Quiz 4: Due Sunday October 20 11:59pm EST
Module 5: Command and Control and Incentive-based Policies		
10	Oct 21 – Oct 25	Ch 11: Command-and-Control Policies: The Case of Standards
11	Oct 28 – Nov 1	Ch 12: Incentive-Based Strategies: Emission Charges and Subsidies Homework 5: Due Wednesday October 30 11:59pm EST Quiz 5: Due Sunday November 3 11:59pm EST
Module 6: Market Trading Systems and Climate Change		
12	Nov 4 – Nov 8	Ch 13: Incentive-Based Strategies: Market Trading Systems
13	Nov 11 – Nov 15	Ch 18: Global Climate Change Homework 6: Due Wednesday November 13 11:59pm EST Quiz 6: Due Sunday November 17 11:59pm EST
Module 7: International Issues		
14	Nov 18 – Nov 22	Ch 19: International Environmental Agreements
15	Nov 25 – Nov 29	THANKSGIVING BREAK – NO CLASS!
16	Dec 2 – Dec 6	Ch 20: Globalization Homework 7: Due Wednesday December 4 11:59pm EST Quiz 7: Due Sunday December 8 11:59pm EST
Concluding Module: Final Remarks		
17	Dec 9 – Dec 13	Wrapping up the semester End-of-Semester Assignment: Due Wednesday Dec 11 11:59pm EST

Each *Academic Module* will have four primary lecture components:

1. **A guided discussion and overview** about the material in Canvas;
2. **Lecture Notes** (outline format, PDF);
3. **Lecture notes** (in PowerPoint format, PDF);
4. **An mp4 video file of the PowerPoint slides with my lecture accompanying them.**

The material in a module is often divided into several shorter lectures or lessons. Please note that the posted mp4 video files are significantly shorter than the traditional lecture time. There are several reasons for this. First, the lectures are delivered via PowerPoint so there is less time devoted to writing things down on the board or in your own notes. Second, during a traditional lecture, students often ask clarifying questions which usually leads interesting in-class discussions. In pre-recorded lectures, this feature will naturally be absent. Consequently, the material will be covered in a much shorter period of time than traditional lectures. Third, students are also expected have read the textbook prior to reviewing the material in the module. Therefore, the discussion will embark at a brisk pace. You can, of course, pause the lecture and rewind and rewatch portions that you feel need additional explanations and coverage. Past students have told me that the optimal way to approach and study for this course is the following workflow:

- I. **READ** the posted lecture notes (in outline format);
 - This gives you a preliminary overview of the material and the main concepts covered in the lecture;
- II. **READ** the assigned chapter in the textbook or the assigned portion of a chapter;
 - This provides a more in-depth discussion of the concepts with applications and implications discussed in the text;
- III. **VIEW** the lecture videos.
 - a. This helps to reinforce the concepts introduced. During lectures, you will also frequently get helpful pointers and tips from your instructor;
- IV. If anything seems to be unclear, feel free to **REACH OUT** to me with questions or simply go back and review the material further;
- V. Make sure to get homeworks and assignments **DONE** well ahead of deadlines.

Introductory Module: Before you can proceed to *Module 1*, you must have completed an ungraded syllabus quiz in the *Introductory Module*. This is to ensure that you have read the course syllabus and that you understand the course delivery and grading policies.

Evaluation of Performance and Grading

Quizzes: There will be seven (7) quizzes offered during the semester – one quiz for each academic module (*Module 1* through 7). Each quiz is worth 100 points. Your lowest quiz grade is automatically dropped, so only your six (6) highest quiz grades count (for a total of 600 points towards your final course grade, or 60%). The quizzes will consist of multiple-choice questions. The quizzes are closed book and closed notes. The quizzes will be administered using HonorLock in Canvas (please see page 6 of this course syllabus). A simple calculator may be used – there is a built-in calculator in HonorLock that you may use during quizzes. You are also allowed to use ONE blank sheet of scratch paper. Other aides, however, are not allowed. HonorLock requires students to have access to a computer with a webcam (either internal or USB). **The quizzes will open at 10:00am EST on the Friday before the due date.** Once you start your quiz, you will have 30 minutes to finish. **The quiz must be completed by 11:59pm EST on due dates (Sundays).** Thus, you have a two-day window to complete the quiz. This will give you a cushion in case something unforeseen happens or if your internet service is temporarily

interrupted. The quizzes will only cover the material from associated Academic Module. Quizzes are not cumulative. The quiz dates (also available in the *semester schedule* on page 4 of this syllabus) are:

Quiz 1:	Sunday September 8 (due 11:59pm EST)
Quiz 2:	Sunday September 22 (due 11:59pm EST)
Quiz 3:	Sunday October 6 (due 11:59pm EST)
Quiz 4:	Sunday October 20 (due 11:59pm EST)
Quiz 5:	Sunday November 3 (due 11:59pm EST)
Quiz 6:	Sunday November 17 (due 11:59pm EST)
Quiz 7:	Sunday December 8 (due 11:59pm EST)

The instructor reserves the right to change these dates as appropriate. Any changes will be communicated via Canvas. **There is no formal Final Exam for this course.**

Make-Up Quizzes: Early or late quizzes are usually not given. Minor illnesses, work, or family obligations are not acceptable excuses for a make-up quiz nor are internet services outages – quizzes are online and you are generously allowed until 11:59pm on quiz days to complete the quiz. Remember, your lowest quiz grade is dropped. Use this drop wisely.

Homeworks: There will be seven (7) homeworks assigned during the semester – one assignment for each academic module (*Module 1* through *7*). Each homework is worth 50 points. Please note that there are no assignments for *Module 0*. There are no make-up assignments and late submissions are not entertained. Completed assignments are to be uploaded in Canvas before the designated deadline. In calculating your final course grade, your lowest Homework grade is dropped and only your highest six (6) grades count. The Homeworks combined count for 30% of your final course grade. Homeworks are due not later than 11:59pm EST on the assigned dates below (also found in the *semester schedule* on page 4 of this syllabus):

Homework 1:	Wednesday September 4 (due no later than 11:59pm EST)
Homework 2:	Wednesday September 18 (due no later than 11:59pm EST)
Homework 3:	Wednesday October 2 (due no later than 11:59pm EST)
Homework 4:	Wednesday October 16 (due no later than 11:59pm EST)
Homework 5:	Wednesday October 30 (due no later than 11:59pm EST)
Homework 6:	Wednesday November 13 (due no later than 11:59pm EST)
Homework 7:	Wednesday December 4 (due no later than 11:59pm EST)

End-of-Semester Assignment: An End-of-Semester Assignment will be posted in the final, concluding module on Canvas. More detail will be provided in the module itself. Completed assignments are to be uploaded in Canvas no later than **11:59pm EST Wednesday December 11**. The project will be released on Canvas Friday November 22. The project is intended to help you apply the concepts we have covered during the semester. The project is an individual assignment. Students submitting projects that are too similar for comfort to that of another student will be considered cheating and will be treated as such. More information about the project will be provided in class. The project is worth 100 points (or 10%) towards your final course grade.

Grades: Your final grade for AEB2451 will be based on the following:

Course Assignments	Total Points	% of Total
Quizzes (best 6 out of 7)	600 points (100 points each)	60%
Homeworks (best 6 out of 7)	300 points (50 points each)	30%
End-of-Semester Assignment	100 points	10%
Total	1000 points	100%

The grade scale is presented below. Please note that UF does not have an A+ option.

Grade	Percentage	Total points	Grade Points	Information on current UF grading policies for assigning grade points can be found here: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/
A	93% or more	≥ 930	4.00	
A-	90.0 – 92.9%	900 – 929	3.67	
B+	86.0 – 89.9%	860 – 899	3.33	
B	83.0 – 85.9%	830 – 859	3.00	
B-	80.0 – 82.9%	800 – 829	2.67	
C+	76.0 – 79.9%	760 – 799	2.33	
C	73.0 – 75.9%	730 – 759	2.00	
C-	70.0 – 72.9%	700 – 729	1.67	
D+	66.0 – 69.9%	660 – 699	1.33	
D	63.0 – 65.9%	630 – 659	1.00	
D-	60.0 – 62.9%	600 – 629	0.67	
E	59.9% or less	≤ 599	0.00	

Students should be aware that grades are not ‘rounded’ or in any way ‘adjusted’ at the end of the term. Grading is not a negotiation process and arguing over grades at the end of the semester is NOT entertained. However, if you believe that your quiz or assignment is incorrectly graded or that your grade is incorrectly posted, please contact me via e-mail (i.e., in writing) as soon as possible. If I have made an error, I will be happy to adjust your grade.

Other Important Information

Students are responsible for all deadlines/critical dates and policies set forth by the University of Florida. Deadlines/critical dates are published on the University of Florida Office of the University Registrar’s website, <http://www.registrar.ufl.edu/>. Current academic policies are presented in the University of Florida Undergraduate Catalog, <https://catalog.ufl.edu>. Please make sure you familiarize yourself with these resources.

HonorLock Quiz Proctoring: You will take your quizzes online in Canvas. In order to maintain a high standard of academic integrity and assure that the value of your University of Florida degree is not compromised, the quizzes will be proctored by HonorLock. HonorLock will be used to record your quiz session and proctors will investigate and report all violations to the instructor.

You will need a computer with a webcam, speakers, microphone and reliable Internet connection to be able to take your quizzes. **Google Chrome is the only supported browser for taking exams in Canvas.** You DO NOT need to register for an account, download any software, pay any fee for HonorLock, or schedule an appointment in advance. HonorLock is automatically available for all exams in this course.

To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install.

When you are ready to take your quiz, log onto the Canvas page for the course and click on your quiz. Clicking Launch Proctoring will begin the Honorlock authentication process, where you will take a picture of yourself,

show your ID, and complete a scan of your room. Honorlock will be recording your quiz session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device.

Prior to each quiz, ensure that your computer software is properly updated and that the HonorLock Chrome Extension is installed. You can run a free system check by visiting the HonorLock website and clicking RUN SYSTEM CHECK at: <https://honorlock.com/support/>.

If you experience any technical difficulties, you should seek assistance from Gator Help Desk. If you encounter issues during a quiz, HonorLock Support is built into the exam platform and available in real time. As you navigate through your quiz, a link to live chat and support services will be available at all times by clicking on the help button in the quiz. Honorlock support is available 24/7/365. If you encounter any issues, you may contact HonorLock by live chat (available within the exam itself), via phone (844) 243-2500, and/or email support@honorlock.com.

Grades and Grade Points: For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Academic Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*" It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <https://sccr.dso.ufl.edu/process/student-conduct-code/>

Plagiarism: The Student Honor Code and Student Conduct Code states that:

"A Student must not represent as the Student's own work all or any portion of the work of another. Plagiarism includes but is not limited to:

- Stealing, misquoting, insufficiently paraphrasing, or patch-writing.
- Self-plagiarism, which is the reuse of the Student's own submitted work, or the simultaneous submission of the Student's own work, without the full and clear acknowledgment and permission of the Faculty to whom it is submitted.
- Submitting materials from any source without proper attribution.
- Submitting a document, assignment, or material that, in whole or in part, is identical or substantially identical to a document or assignment the Student did not author."

COVID-19 University Policy: As Gators, we are characterized by our resilience as well as our commitment to caring for one another. In that vein, the university welcomes – but does not require – people to wear masks on campus. Further, in alignment with guidance from the Centers for Disease Control and Prevention as well as UF Health, we continue to encourage everyone to vaccinate to minimize their risk of COVID-19. To learn more about COVID-19 vaccines, testing and related topics, visit coronavirus.ufhealth.org.

Attendance and Make-Up Work: Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/> In general, you are expected to be in class each day and submit all work on time on e-Learning.

Students Requiring Accommodations: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. <https://disability.ufl.edu/>.

Course Evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students are notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy: UF students are bound by The Honor Pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Conduct Code](#). If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use: All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy: There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

Campus Resources:

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

University Police Department: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call

352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website.](#)

Academic Resources

E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

By enrolling in this course you are agreeing to the term and policies outlined in this syllabus.

Let us have a great semester!

GO GATORS!