

University of Puerto Rico  
Mayagüez Campus  
Dean of Academic Affairs

**Course Syllabus**

|   |                      |
|---|----------------------|
| <b>1. General Information:</b>  |                      |
| Alpha-numeric codification: INTD 3357<br>Course Title: Environmental Sustainability<br>Number of credits: 3cr.<br>Contact Period: 3 hours of lectures per week  |                      |
| <b>2. Course Description:</b>   |                      |
| English: This course deals with the most relevant issues related to the science, goals, principles, and practical applications of sustainability from science/engineering, economic, policy, social and business perspectives.  |                      |
| Spanish: Este curso trata los aspectos más relevantes relacionados con las ciencias, los objetivos, principios y aplicaciones prácticas de la sostenibilidad desde una perspectiva de ciencia / ingeniería, economía, política, social y negocios.  |                      |
| <b>3. Pre/Co-requisites and other requirements:</b>   |                      |
| None  |                      |
| <b>4. Course Objectives:</b>  |                      |
| At the end of this course, the students will have a comprehensive understanding of the multidisciplinary aspects involved in climate change science and its impacts. The course covers fundamentals of economics, atmosphere, energy and many other topics.   |                      |
| <b>5. Instructional Strategies:</b>   |                      |
| <input checked="" type="checkbox"/> conference <input type="checkbox"/> discussion <input type="checkbox"/> computation <input type="checkbox"/> laboratory<br><br><input type="checkbox"/> seminar with formal presentation <input type="checkbox"/> seminar without formal presentation <input type="checkbox"/> workshop<br><br><input type="checkbox"/> art workshop <input type="checkbox"/> practice <input type="checkbox"/> trip <input type="checkbox"/> thesis <input type="checkbox"/> special problems <input type="checkbox"/> tutoring<br><br><input type="checkbox"/> research <input type="checkbox"/> other, please specify: |                      |
| <b>6. Minimum or Required Resources Available:</b>  |                      |
| Regular access to the internet  |                      |
| <b>7. Course time frame and thematic outline</b>  |                      |
| <b>Outline</b>  | <b>Contact Hours</b> |
| Introduction to Climate Change and Global Warming   | 3                    |
| Introduction to Sustainability (Human Footprint, World Population)  | 3                    |
| Energy: (Conservation, Renewable Sources, Energy Audits)  | 3                    |
| Green Transportation  | 2                    |
| Water and Sustainable Agriculture   | 5                    |
| Eating ecologically   | 4                    |
| Recycling, Reducing, Reusing  | 2                    |
| Environmental Policy  | 2                    |

|  |           |
|--|-----------|
| Social Consequences (war, migrations, disease, etc.) | 3         |
| Electronic-waste                                     | 4         |
| Green Chemistry                                      | 4         |
| Green Economy  | 3         |
| Measuring Sustainability                             | 2         |
| Green buildings, LEED certification                  | 2         |
| Exams  | 3         |
| <b>Total hours: (equivalent to contact period)</b>   | <b>45</b> |

### 8. Grading System

Quantifiable (letters)  Not Quantifiable

### 9. Evaluation Strategies

|  | Quantity | Percent     |
|--|----------|-------------|
| <input type="checkbox"/> Exams           |          |             |
| <input type="checkbox"/> Final Exam      | 1        | 15          |
| <input type="checkbox"/> Short Quizzes   | 6        | 60          |
| <input type="checkbox"/> Oral Reports    | 1        | 10          |
| <input type="checkbox"/> Monographies    | 1        | 15          |
| <input type="checkbox"/> Portfolio       |          |             |
| <input type="checkbox"/> Projects        |          |             |
| <input type="checkbox"/> Journals        |          |             |
| <input type="checkbox"/> Other, specify: |          |             |
| <b>TOTAL:</b>                            |          | <b>100%</b> |

### 10. Bibliography:

- a. Handbook of Sustainable Engineering, 2013
- b. Office of Water climate change adaptation implementation plan, 2013
- c. The cost of delaying action to stem climate change, CEA, 2014
- d. Research Priorities for Tropical Ecosystems under Climate Change Workshop report, 2012
- e. Climate Change, heat stress, and US dairy production, 2014
- f. Overview, climate change impacts in the US. US GCRP, 2014
- g. Climate Change and the American People, 2013
- h. Cradle to Cradle, 2011
- i. Global and local threats to coral reef functioning and existence, Wilkinson, 1999
- j. Principles of Organic Aquaculture, 2012
- k. The USDA organic insider , 2013
- l. Green buildings, 2014 (CSST)
- m. Biotechnology of algal biomass production, 1993
- n. The impact of wind and solar on the value of energy storage, 2013
- o. Leveraging technology for a sustainable world, Life Cycle Engineering, CIRP 2012
- p. Green Chemistry: synthesis of bioactive heterocycles, 2014
- q. Garbage and recycling, 2007, Young M.
- r. Recycling technology products, an overview of e-waste policy issues, 2006
- s. The U.N. IPCC (latest) Report

### 11. According to Law 51

Students will identify themselves with the Institution and the instructor of the

course for purposes of assessment (exams) accommodations. For more information please call the Department of Counseling and Psychological Services at the Dean of Students Office (DE-21) at (787) 265 - 3864 or (787) 832 - 4040 extensions 3772, 2040 or 3864. Email: [pura.vicenty@upr.edu](mailto:pura.vicenty@upr.edu).

**12. Academic Integrity:** —The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.—