**Sustainability Related and Sustainability Focused Courses**

**Oregon Institute of Technology**

**Summer 2009-Spring 2010**

**Background**

As part of the Oregon Institute of Technology’s (OIT) participation in the Association for the Advancement of Sustainability in Higher Education’s Sustainability, Tracking, and Rating System (STARS 1.0) a course inventory was conducted over the 2009-2010 academic year. The definitions for “sustainability-related and focused” courses were adopted by the OIT Sustainability Committee on February 24, 2010 and follow the recommended guidelines provided by STARS:

 “Sustainability-focused courses concentrate on the concept of sustainability, including its social, economic, and environmental dimensions, or examining an issue or topic using sustainability as a lens.”

“Sustainability-related courses incorporate sustainability as a distinct course component or module, or concentrate on a single sustainability principle or issue.”

More specific definitions were also adopted by the Committee:

“In order to determine whether or not a course is sustainability related or focused, it is useful to ask whether or not a given course will help students to achieve one or more of the following:

Awareness

1. Understand and be able to effectively communicate a concept of sustainability.
2. Explore ethics and globalization with respect to a particular discipline.

Understanding

1. Understand the connections between a student’s major and sustainability.
2. Understand whole-systems approaches to problem solving.

Apply

1. Develop technical skills or expertise necessary to implement sustainability solutions.
2. Apply knowledge of sustainability to contribute to practical solutions to real-world health, social, economic, and environmental challenges.

Synthesize

1. Synthesize understanding of the interconnections between health, social, economic, and environmental systems.

If a course addresses one or more of numbers 1-6, then it can be counted as sustainability-related.  If it addresses number 7, then it can be counted as sustainability-focused.”

**Methodology**

The above definitions were used to identify sustainability-related and focused courses for the 2009-2010 academic year. The course inventory was supervised by Sustainability Coordinator, Carrie Wittmer, and conducted by student Sustainability Intern, Spencer Jones. Course lists were obtained from the registrar’s office and a preliminary evaluation was conducted by Jones and Wittmer. Based on the preliminary evaluation, an email was sent to all OIT faculty with the list of sustainability-related and focused courses. Faculty had a week and a half to respond to the email. Faculty could add to the list or comment on list accuracy for courses that they teach. Additionally, individual faculty were approached to refine the assessment where there were questions. Based on faculty responses, a final list of sustainability-related and focused courses was compiled.

**Results**

Out of the 2,954 courses taught from Summer 2009 to Spring 2010, 106 were sustainability-related (3.6%) and 1 was sustainability-focused (0.034%).

**Course Inventory of Sustainability-Related and Focused Courses**

**Term offered & Course Title Instructor Department**

**Summer 2009 7 Sustainability-related Courses 287 Classes Total**

  **0 Sustainability-focused Courses**

**Sustainability-related Courses**

REE 207 Seminar Bass III R EE

REE 243 Electrical Power, Electrical Power Lab Bass III R EE

REE 253 Electomechanical Enrgy Conv Rytkonen F EE

REE 307 Seminar Thermal Energy Systems Bass III R EE

REE 347 Hydroelectric Power Sheldon L EE

REE 413 Electric Power Conv Systems Edmondson J EE

REE 459 Senior Project III Bass III R EE

**Sustainability-focused Courses**

No sustainability-focused Courses were recorded for this term.

**Fall 2009 22 Sustainability-related Courses 923 Total Classes**

  **0 Sustainability-focused Courses**

**Sustainability-related Courses**

BIO 111 Intro to Env Sciences Sale K, Ritter J NS

BIO 407 seminar Field methods for Environ Sci Ray A NS

CHE 260 Electrochemistry for RE applic, RE lab Svanevik L NS

CIV 315 Princ of Environ Engineering Thaemert D CIV

CIV 573 Transportation & Land Dev Lindgren R CIV

HIST 356 A History of Energy Clark M HASS

MET 160 Materials I, Materials I lab Stuart W MMET

 Materials I El Hajjar R MMET

MET 360 Materials II Stuart W MMET

REE 201 Intro to Renewable Energy Torres Garibay C EE

Intro to Renewable Energy Petrovic S EE

Intro to Renewable Energy Zipay J EE

Intro to Renewable Energy Crespo Veiga C EE

Intro to Renewable Energy Riobo Aboy P EE

Intro to Renewable Energy Bass III R EE

REE 331 Fuel Cells Torres Garibay C EE

Fuel Cells, Fuel Cells Lab Petrovic S EE

REE 346 Biofuels and Biomass Torres Garibay C EE

REE 348 Solar Thermal Energy Systems Clements L EE

REE 463 Energy Systems Instrum & Cntrl Rytkonen F EE

 Energy Systems Instrum & Cntrl Lab Rytkonen F EE

 Energy Systems Instrum & Cntrl Lab Wang YEE

**Sustainability-focused Courses**

No sustainability-focused Courses were recorded for this term.

 **Winter 2010 33 Sustainability-related Courses 861 Total Classes**

  **1 Sustainability-focused Course**

**Sustainability-related Courses**

BIO 102 General Biology, General Biology Lab Sale K NS

BIO 112 Intro to Data Analysis Ray A NS

BIO 212 Principles of Biology Sale K NS

Principles of Biology Lab Sale K NS

Principles of Biology Lab Sale K NS

Principles of Biology Lab Ray A NS

 Principles of Biology Lab Ray A NS

 Principles of Biology Lab Ray A NS

BIO 261 Sophomore Project Proposal Wittmer C NS

BIO 407 Seminar Treatment Wetlands Ray A & Thaemert D NS

BIO 472 Senior Project Proposal Wittmer C NS

BUS 415 Environmental Regulation Sevigny M MAN

BUS 477 Controversial Issues in Management Sevigny M MAN

CIV 361 Water and Sewer Sys Dsgn, Water and Sewer Sys Dsgn Lab Thaemert D CIV

CIV 371 Intro Transportation Eng'g Lindgren R CIV

CIV 407 Seminar Treatment Wetlands Ray A & Thaemert D CIV

ECO 357 Energy Economics Jones C MAN

ENGR 407 REE Senior Project Bass R EE

 REE Senior Project Petrovic S EE

 REE Senior Project Rytkonen F EE

GEOG 105 Phys Geography: Geomorphology Wittmer C NS

HIST 356 A History of Energy Clark M HASS

MFG 599 Selected Topics/Finance & Mngt

 Sustainability in Manufacturing Woodall D MMET

REE Senior Project I Zipay J EE

REE 201 Intro to Renewable Energy Petrovic S EE

REE 207 Thermal Systems Practicum Bass R EE

REE 307 Energy Storage Systems Torres Garibay C EE

REE 307 Batteries Petrovic S EE

REE 346 Biofuels & Biomass Clements L EE

REE 407 Greenhouse gas emissions & carbon footprinting Jones C EE

REE 412 Photovoltaic Systems Bass R EE

 Photovoltaic Systems Petrovic S EE

REE 439 Energy Systems Management White T EE

**Sustainability-focused Courses**

CIV 407 Environmental River Mechanics Thaemert D CIV

**Spring 2010 Classes 44 Sustainability-related Courses 883 Total Classes**

  **0 Sustainability-focused Courses**

**Sustainability Related Courses**

BIO 226 Intro to Wildlife Rehab Diver E NS

BIO 262 Sophomore Project Wittmer C NS

BIO 337 Aquatic Ecology Sale K & Ray A NS

BIO 473 Senior Project Data Collection Wittmer C NS

 BUS 447 WEB Controversial issues in management Sevigny M MAN

CHE 360 Electrochemistry for REE Apps Torres Garibay C EE

 Electrochemistry for REE Apps Petrovic S EE

 Electrochemistry for REE Apps Lab Torres Garibay C EE

 Electrochemistry for REE Apps Lab Torres Garibay C EE

 Electrochemistry for REE Apps Lab Petrovic S EE

 Electrochemistry for REE Apps Lab Petrovic S EE

 Electrochemistry for REE Apps Lab Petrovic S EE

 Electrochemistry for REE Apps Lab Larson A EE

 Electrochemistry for REE Apps Lab Little B EE

CIV 362 Hydrology + Surface H20 Management Thaemert D CIV

CIV 375 Highway engineering Lindgren R CIV

CIV 531 Open Channel Hydraulics Thaemert D CIV

ENGR 407 Senior Project Rytkonen F EE

 Senior Project Bass R EE

ENV 407 Greenhouse Gas Accounting/Footprinting Jones C NS

HUM 125 Technology, Society, and Values Clark M HASS

HIST 356 A History of Energy Clark M HASS

 WEB A History of Energy Clark M HASS

MFG 407 Ocean Renewable Energy Stuart W MMET

REE 201 Intro to Renewable Energy Petrovic S EE

REE 207 Thermal Energy Systems Design Bass R EE

REE 243 Electrical Power Zipay J EE

 Electrical Power Rytkonen F EE

 Electrical Power Bass R EE

 Electrical Power Lab Zipay J EE

 Electrical Power Lab Zipay J EE

 Electrical Power Lab Sweeney D EE

 Electrical Power Lab Bass R EE

 Electrical Power Lab Rytkonen F EE

REE 253 Electro Mechanical Energy Conversion Rytkonen F EE

 Electro Mechanical Energy Conversion Lab Rytkonen F EE

 Electro Mechanical Energy Conversion Lab Pacella M EE

REE 307 Ocean Renewable Energy Stuart W EE

REE 339 Senior Project 1 Petrovic S EE

REE 347 Hydro Electric Power Torres Garibay C EE

REE 354 Wind Power Saylors S EE

REE 407 Greenhouse Gas Accounting/Footprinting Jones C EE

REE 451 Geothermal Energy & Ground Source White T & Staff EE

REE 455 Energy Efficient Building Design White T EE

**List of Departments Offering Sustainability-Related and Focused Courses**

**Total number of OIT Departments: 20 Total number of OIT Departments Offering SR or SF Courses: 6**

 **% of OIT Departments Offering SR or SF Courses: 30%**

**Departments with SR and/or SF Courses:**

Civil Engineering (CIV)

Electrical Engineering and Renewable Energy (EE)

Humanities and Social Sciences (HASS)

Manufacturing and Mechanical Engineering and Technology (MMET)

Management (MAN)

Natural Sciences (NS)