

# Graduate Certificate in Sustainability

## Greening The Curriculum at New Mexico State University

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All About Discovery!  
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New Mexico State University

# Purpose Today

- Seek Graduate Council Approval for University-wide Graduate Certificate
- Already have Registrar's approval to put into course catalogue for Marketing purposes
- With Graduate Committee approval, we then go to Graduate College, then ADAC's final approval on ***university-wide Graduate Certificate in Sustainability***



# Strategy

To develop a Graduate Certificate Program consisting initially of courses this is **HOUSED** in College of Business - MBA program with some options in other colleges: A&S, ACES ...



## ***Sustainability Definitions for Curriculum:***

- Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability in the curriculum encourages students to make connections between the knowledge and skills addressed in traditional, discipline-based course offerings with their applications by practitioners, policy makers, and consumers to help create a sustainably configured economy, society, and environment. Sustainability curriculum provides students with the background and skills necessary to address problems related to energy, the environment, culture and society, and economic development as interdependent and interconnected processes that transcend individual disciplines.



# Define Sustainability-Focused Courses



***Sustainability-focused courses*** concentrate on the concept of sustainability, including its socio-cultural, economic, and environmental dimensions, or examine an issue or topic using sustainability as a lens. To be considered sustainability-focused, the course should include three or more of the sustainability educational objectives listed below, and put the leaf above in your course materials.





## Define Sustainability-Related Courses

***Sustainability-related courses*** incorporate sustainability as a distinct course component or module, or concentrate on a single sustainability principle or issue. To be considered sustainability-related, a course should include one or more of the sustainability educational objectives listed below, and please put the leaf in your department and course materials.





# Learning Objectives

1. Understand and be able to effectively communicate the concept of sustainability.
2. Develop and use an ethical perspective in which they explain how sustainability relates to their lives and values, and how their actions impact issues of sustainability.
3. Become aware of and explain how economy, society, culture, energy, and the environment are interrelated, making connections between their chosen course of study and sustainability.
4. Develop technical skills or expertise necessary to implement sustainable solutions.
5. Explain the ways in which sustainable thinking and decision-making contributes to the process of creating solutions for current and emerging social, environmental, and economic crises.
6. Apply concepts of sustainability locally (e.g. to change daily habits and consumption patterns) and globally by engaging in the challenges and solutions of sustainability in a world context.
7. Synthesize understanding of the interconnections among social, cultural, economic, energy, and environmental systems and reason holistically.



# Requirements

- A 3.0 minimum cumulative GPA in sustainability courses will be required for award of the Sustainability Graduate Certificate Program.





# Benefits of Graduate Certificate

- The University-wide Graduate Certificate helps masters students prepare for a career in sustainability.
  - The Graduate Certificate draws upon disciplines of study across the College of Business, and the university.
- Advising is currently available in Management Department.





# Who has Gold Star in Sustainability:

- Colorado State University **GOLD**
- Iowa State University **GOLD**
- Kansas State University **NONE**
- Montana State University **NONE**
- New Mexico State University **GOLD**
- Oklahoma State University **BRONZE**
- Oregon State University **GOLD**
- Texas Tech (Lubbock) **NONE**
- University of Arizona **NONE**
- University of Idaho **NONE**
- University of Nevada **SILVER**
- University of New Mexico **NONE**
- University of Texas at El Paso **NONE**
- Utah State University **NONE**
- Washington State University **GOLD**
- University of Wyoming **NONE**





**TOTAL 12 Credits: Choose 9 credits from A List & 3 credits from B List**

**A LIST:**

BCIS 502	Business-Information-Systems Prerequisite: graduate students only	
HRTM 450	Special Topics – Summer <a href="#">Study Costa Rica</a> in English (must have 2.5 GPA).	
HRTM 492	Special Research in Sustainability Topic	
MGT 590	Strategic Management Prerequisite: M.B.A. student in his or her final semester. Restricted to majors.	
MGT 655	Systems Theory & Sustainability Prerequisites: doctoral status or permission of instructor for masters students.	
MGT 685	Storytelling Consulting Doctoral Seminar Prerequisites: doctoral status or permission of instructor for masters students.	
MGT 690	Independent Study in Sustainability Management	
ECDV 671	Sustainable Economic Development Prerequisites: AEEC 501, AEEC 502 and AEEC 540	
ECON 573	Regulatory Policy and Industry Analysis: Electricity II Consent of instructor required. Prerequisite(s): ECON 571 or consent of instructor	

**B LIST: Choose 3 credits (usually one course)**

ANTH 536	Anthropology of Development	
ANTH 538	Plants, Culture, and Sustainable Development	
BLAW 530	American Indian Law and Policy	
HORT 485	Vegetable Crop Management	

**Note:**  is for Focused Course;  is for Related Course See Definitions Page **Note: Check prerequisites in Graduate Catalogue;** Requirements: A 3.0 minimum cumulative GPA in Sustainability courses (above) will be required for award of the Sustainability Graduate Certificate

# Next Step

- **When done, Please Read <http://gradschool.nmsu.edu/certificates.html> and then Complete Online Application for Completion of Graduate Certificate**



# Greening the Curriculum – Thinking About A Greener Future

## Table 1: Measures/Targets for Greening the Curriculum @ NMSU relate to Vision 2020 University Goals

<b>Measures/ Targets</b>	Dec 2014	Dec 2015	Dec 2016
<b>Departments participating in sustainability programs</b>	Set baseline database	+5%	+10%
<b>Sustainability program enrollment diversity Female</b>	Set baseline database	+3%	+5%
<b>Sustainability program enrollment diversity Hispanic (&amp; others TBD)</b>	Set baseline database	+2%	+5%
<b>Courses with international sustainability service and outreach components</b>	Set baseline database	10%	15%
<b>Courses with Energy savings Projects</b>	Set baseline database	+5%	+10%
<b>Estimated savings of those projects</b>	Set baseline database	\$20,000	\$40,000
<b>Courses with sustainability projects</b>	Set baseline database	+10%	+15%
<b>Faculty with sustainability related donations, grants and contracts</b>	Set baseline database	+10%	+15%
<b>Sustainability related jobs found by students</b>	N/A (set baseline database)	+5%	+10%

**Table 2: 7 Vision 2020 Goals and SUSTAINABILITY MINOR outcomes & measures**

<p>1. Graduation – Teaching, Learning &amp; Programs - <i>Provide effective academic programs, stellar teaching and learning, and enhanced student engagement to advance highly capable graduates</i></p>	<p>Increases in enrollment from 3% form Baseline by 2014: graduating students; 5% increases from the current course offerings; 5% increase in departments participating with course offerings that are sustainability-focused or sustainability-related.</p>
<p>2. Diversity – <i>Be a model of student, faculty and staff diversity at all levels</i></p>	<p>Increase in diversity enrollment by 3% by FY 2014: NMSU currently has 45% Hispanic enrollment, which we intend to increase in this program; includes 3% increase in female enrollment in the sustainability-focused or sustainability-related courses.</p>
<p>3. Internationalization - <i>Effectively prepare students for a global society</i></p>	<p>Increase 10% in International courses that are sustainability-focused or sustainability-related; includes 10% increase in course projects that focus on international cases and service projects. Talloires Declaration signed by NMSU, item 9 is to broaden service and outreach of sustainability both nationally and internationally</p>
<p>4. Research &amp; Creative Activity-- <i>Be the catalyst for promoting discovery, encouraging innovation, sparking economic advancement, and inspiring creative achievement</i></p>	<p>Measure is number of these energy saving projects, and secondly the estimate dollar savings to NMSU and its communities. FY 2014 goal is \$20,000 in reported project savings to university and/or community</p>
<p>5. Economic Development -- <i>Be a driving force for economic progress in New Mexico</i></p>	<p>We will assess number of projects in courses students are taking as part of Sustainability minor, and in sustainability-focused or sustainability-related courses.</p>
<p>6. Resource Stewardship -- <i>Increase philanthropy and alternative revenue to support teaching, research and service</i></p>	<p>Alumni donations increase of 10% in FY 2014, specifically for sustainability efforts to support teaching, research, and service. Currently 106/694 (15%) faculty are doing grants and research related to sustainability</p>
<p>7. Community - Service, Extension &amp; Outreach -- <i>Be a model for community engagement at all levels through innovative</i></p>	<p>This is measured by students picking sustainability careers. Part of our project is to work with career center, have boths in 3 career expos in FY 2014, training for advising</p>

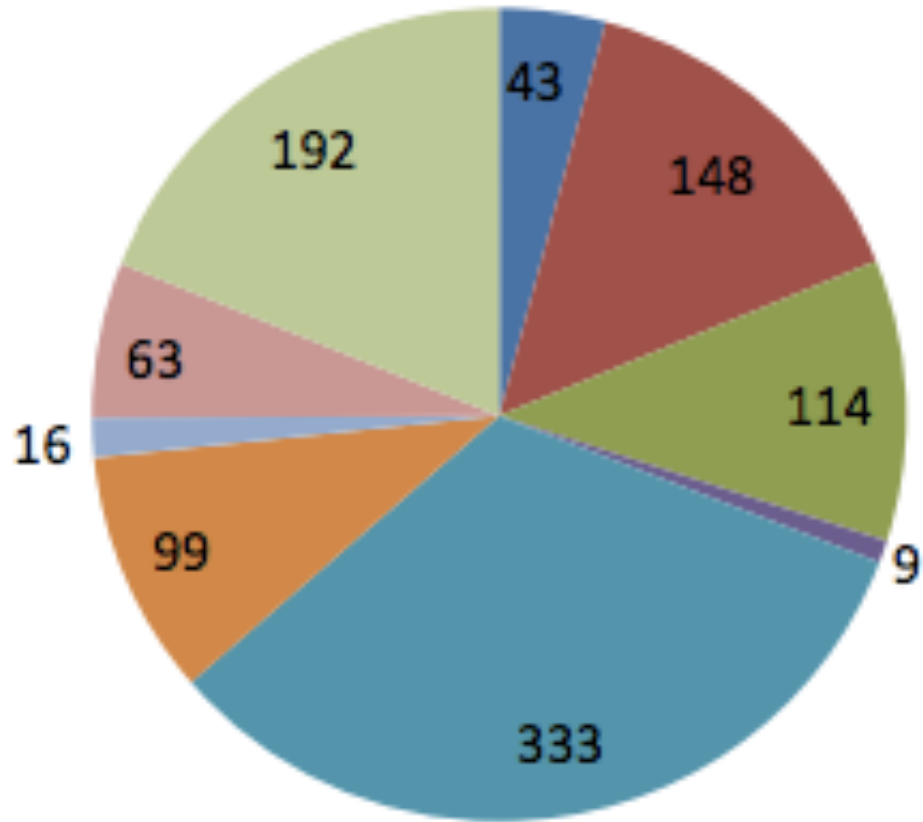


# Career Fair - Feb 4-5 2014 @ NMSU





### Student Participation by College



- Agriculture Consumer Env. Science
- Arts and Sciences
- Business
- Education
- Engineering
- Graduate
- Health and Social Services
- Community College
- Guests

**Total Participants 1017**

## # Jobs in International Sustainability Careers

- Wind Energy Jobs (135)
- Environmental Jobs (91)
- Consulting Jobs (62)
- Solar Power Jobs (52)
- Energy Efficiency Jobs (36)
- Biofuels and Bioenergy Jobs (32)
- Hydro Power Jobs (24)
- Electricity T&D Jobs (24)
- Energy Policy Jobs (23)
- Waste to Energy Jobs (11)
- Combined Heat and Power (CHP) Jobs(10)
- Geothermal
- Energy Jobs (9)
- Electrical Energy Storage Jobs (9)
- Tidal Energy Jobs (8)
- Wave Power Jobs (7)
- Thermal Energy Storage Jobs (6)
- Green Transport Jobs (2)
- Hydrogen Production & Storage Jobs(2)
- Carbon Capture and Storage CCS Jobs(1)



## **GREEN MBA Program concentration is in line with National Trends**

- Fast Company Magazine did a reprint of Princeton Review and Entrepreneur Magazine just released their first rankings of the top 16 green MBA programs in the U.S.
- **OUR PEER INSTITUTION, Colorado State University offers Green MBA in Global Social & Sustainable Enterprise Source**



## 16 top Green MBA programs

1. Babson College F.W. Olin Graduate School of Business 12 green-themed classes
2. Bentley University McCallum Graduate School of Business has paid sustainability research projects to help local companies develop sustainability business plans
3. Brandeis University International Business School launched the MBA in Socially Responsible Business (Global Green MBA) with classes in business and the environment, managing the triple bottom line, and investing in energy
4. Claremont Graduate University Drucker School of Business has special topics courses on sustainability and 11 day program in Costa Rica
5. Clark University Graduate School of Management has dual MBA/MA Environmental Science and Policy program with courses in Green Business Management, Management of Environmental Pollutants and Climate Change, Energy, and Development. The school reduced paper output by 80%
6. Columbia University Columbia Business School has a Green Curriculum, with courses in Business and Society, Sustainable leadership and ethics (Doing Well by Doing Good), and topics in Finance and Sustainability, Business in Society
7. Duke University The Fuqua School of Business has a Green Curriculum in a 3-year MBA/Master of Environmental Management joint program, and is placing graduates of the MBA in most sought-after sustainability positions in industry and non-governmental organizations.
8. New York University Leonard N. Stern School of Business has classes in Corporate Branding and Corporate Social Responsibility, Introduction to Environmental and Social Sustainability, and Foundations of Social Entrepreneurship. 60% of the MBA courses integrate sustainability content.

## continued

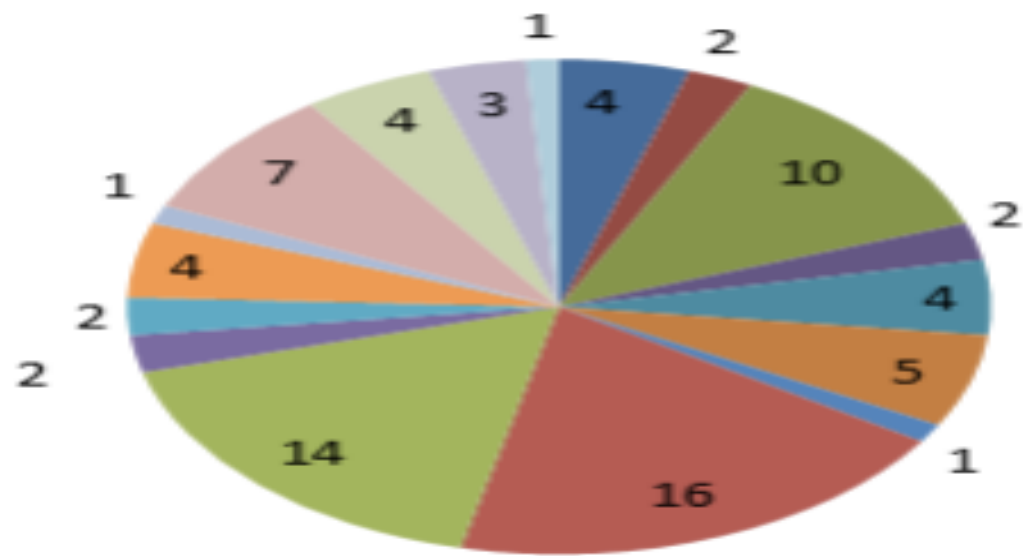
9. Portland State University School of Business put in a sustainability MBA program throughout the curriculum that includes courses in Product Design and Stewardship, Metrics for Sustainability Enterprise, and Social Sustainability.
10. Stanford University Graduate School of Business has a Green Public Management Certificate in socially responsible business and a joint MS/MBA in Environment and Resources.
11. University of Michigan Stephen M. Ross School of Business has the Erb Institute for Global Sustainable Enterprise in partnership with School of Natural Resources and Ross School of Business in at 3-year MS/MBA program with courses like Green Development, Sustainable Manufacturing and Environmental Economics.
12. University of North Carolina at Chapel Hill Kenan-Flagler Business School has an MBA with a concentration in sustainable enterprise, that includes a Sustainability Immersion course as the capstone of their MBA. They offer business consulting in real world sustainability venture experiences, including Sustainable Venture Capital Investment Competition where students with best business plans win seed money.
13. University of Notre Dame Mendoza College of Business offers sustainability courses in topics like Greening the Supply Chain, Improving Environmental Accounting, and research on how company annual reports have a rhetoric of sustainability that does not match their actual energy efforts, etc.
14. University of Virginia Darden Graduate School of Business has a 2nd year concentration on sustainability with 19 courses to choose from, including a signature overseas Global Business Experiences focus on sustainable companies.
15. University of Wisconsin-Madison School of Business has a Graduate certificate in Business, Environment, and Social Responsibility. It is a 12 credit track.
16. McGill University Desautels Faculty of Management in Montreal, Quebec has a new green curriculum that integrates social, environmental, and ethical issues into MBA education using case studies, and a Global Strategy and Leadership minor focused one sustainability issues.

# Publicize

- ✓ **Network the 'New Story of Green MBA'**
- ✓ Alumni Services, Career Fair Services
- ✓ Advising
- ✓ Change the Banner
- ✓ Star Audit programming
- ✓ Tabling
- ✓ Letter to prospective students
- ✓ Letter inviting employers to Green MBA Career Fair
- ✓ Foundation fund raising
- ✓ Green MBA scholarships
- ✓ Green MBA internship
- ✓ Green MBA student association



### Employers by Industry



- Advertising/Marketing
- Business Services
- Information Technology
- Finance
- Government/Public Administration
- Hospitality
- Law Enforcement & Security
- Retail/Wholesale
- Utilities
- Agribusiness
- Commercial Banking
- Construction
- Engineering
- Healthcare
- Insurance
- Petroleum/Energy
- Transportation



# Greening the Curriculum ~ Thinking About A Greener Future

## 122 Organizations exhibited at NMSU Career Fairs 2013 & 2014

ALASKA STRUCTURES Allstate Insurance Company AMERIND Risk Management Corporation ARGO ARIZONA PUBLIC SERVICE  
 B&W Pantex **Baker Concrete Construction** **BAKER HUGHES** Bed Bath & Beyond BNSF Railway Bradbury Stamm  
 Construction, Inc. Campus Special Cargill Center for Countermeasures C.H. ROBINSON WORLDWIDE, INC. Colorado River Municipal  
 Water District Consolidated Electrical Distributors Inc. Convergys Cummins Inc. Dallas Police Department EA Engineering, Science, &  
 Technology, Inc. ECOLAB Enterprise Holdings, LLC Exponential Engineering Company **Exxon Mobil Corporation** FARM  
 CREDIT (State) FARM CREDIT Administration (FED) Fast Enterprises LLC FEDERAL BUREAU OF INVESTIGATION (FBI) Ferguson, a  
 Wolseley Company Fidelity Investments First Light Federal Credit Union Food Corps Freeport-McMoRan Copper & Gold Freeze and  
 Nichols, Inc. Garner Construction Company GEICO – Government Employees Insurance Company GENERAL DYNAMICS C4  
 SYSTEMS **General Genetics Corporation** **General Motors Information Technology, Halliburton HENSEL  
 PHELPS CONSTRUCTION HEWLETT PACKARD** Hispanic Scholarship Fund Institute HollyFrontier Companies **INTEL  
 CORPORATION J.D. ABRAMS, INC. Jacobs Technology Inc.** JBS Five Rivers Cattle Feeding LLC Johnson and  
 Johnson Liberty Mutual Los Alamos National Laboratory McCarthy Building Companies, Inc MIT Lincoln Laboratory Mizkan Americas  
 Mountain State Insurance Group Murphy-Brown LLC Mutual of Omaha Navajo Agricultural Products Industry New Mexico Gas  
 Company NEW YORK LIFE INSURANCE COMPANY **NMSU Greening Curriculum & Careers** NMSU Police Department  
 NMSU Red to Green Money Management Office of the Comptroller of the Currency Oncor Electric Delivery Panda Restaurants Parkhill,  
 Smith & Cooper, Inc. POOLCORP POWER Engineers, Inc. Progressive Insurance ProtoCall Services, Inc. **RAYTHEON  
 COMPANY** Ross Stores, Inc. **SANDIA NATIONAL LABORATORIES Sapphire Energy Inc. Schlumberger  
 Sherwin-Williams** Sitel SRP State Farm Insurance State of NM Taxation & Revenue Dept. Stolar Research Corporation Sulphur  
 Springs Valley Electric Cooperative Target Tata Consultancy Services (TCS) Texas Department of Public Safety Texas Department of  
 Transportation Tinker AFB Civilian Employment The Campus Special, LLC Travelers Insurance TRAX International, LLC Tri-state  
 Generation and Transmission Association, Inc. TTI TYSON FOODS, INC. **Union Pacific Railroad** US Postal Service Ureco URS  
 (formerly EG&G technical Services) USAF 96<sup>th</sup> Test Group US Army Healthcare Recruiting US Bureau of Reclamation US Forest Service  
 - Nationwide US Dept. of Interior - OST US DEPT. OF STATE US CENTRAL INTELLIGENCE AGENCY US Defense Contract  
 Management Agency (DCMA) US Department of State; Bureau of Diplomatic Security US Drug Enforcement Administration US  
 FEDERAL ENERGY REGULATORY COMMISSION US Marine Officer Programs US NATIONAL GEOSPATIAL-INTELLIGENCE  
 AGENCY US Navy US Navy Navair USAF TINKER AIR FORCE BASE, OK Vanguard Western Farmers Electric Cooperative WESTERN  
 REFINING White Sands Federal Credit Union XCEL ENERGY **XCOR Aerospace**

## Invite to Career Expo (Sep) & Career Connections (Feb) SUSTAINABILITY Theme

- ◆ [3m \(77\)](#)
- ◆ [aecom \(1,548\)](#)
- ◆ [aramark \(77\)](#)
- ◆ [allergan \(139\)](#)
- ◆ [armstrong world industries \(77\)](#)
- ◆ [bae systems \(101\)](#)
- ◆ [bhp billiton \(113\)](#)
- ◆ [bayer \(109\)](#)
- ◆ [bechtel corporation \(207\)](#)
- ◆ [brown and caldwell \(170\)](#)
- ◆ [ch2m hill \(619\)](#)
- ◆ [clarke mosquito control \(128\)](#)
- ◆ [dupont \(128\)](#)
- ◆ [ecolab \(70\)](#)
- ◆ [freeport-mcmoran \(866\)](#)
- ◆ [ihs, inc. \(175\)](#)
- ◆ [ingersoll rand \(74\)](#)
- ◆ [jacobs \(75\)](#)
- ◆ [johnsoncontrols.inc \(80\)](#)
- ◆ [millercoors \(157\)](#)
- ◆ [nestle waters north america inc. \(134\)](#)
- ◆ [newmont \(128\)](#)
- ◆ [pall corporation \(122\)](#)
- ◆ [arsons \(150\)](#)
- ◆ [parsons corporation \(547\)](#)
- ◆ [sra international \(82\)](#)
- ◆ [schlumberger \(144\)](#)
- ◆ [siemens \(861\)](#)
- ◆ [urs corporation \(158\)](#)

# Upcoming NMSU Career Fairs

Employment Extravaganza 2014: March 12

Educators' Job Fair 2014: March 30 – April 1,  
2014 - 'Largest in Southwest'

Career Expo 2014: September 16-17

Graduate and Professional School Fair 2014:  
October,

Government & Public Service Career  
Showcase 2014: Nov 20<sup>th</sup>



# NMSU is a CLIMATE Hub for Funding

February 5, 2014 by [Emily C. Kelley, NMSU News Center](#)

“Agriculture Secretary Tom Vilsack announced today the locations for seven Regional Hubs for Risk Adaptation and Mitigation to Climate Change.”

“Climate Hubs” will address increasing risks such as fires, invasive pests, devastating floods and crippling droughts on a regional basis, aiming to translate science and research into information for farmers, ranchers and forest landowners on ways to adapt and adjust their resource management.

The Southwest Regional Hub: located at Rangeland Management Unit/Jornada Experimental Range at NMSU

The Agricultural Research Service location housed at NMSU



## It is important that:

Even in career paths that aren't sustainability focused, almost every company we spoke to at Career Fair wants to save money and improve their image.



Most companies we talked to have sustainability built in to their mission statements





Thank you



Please provide any suggestions on GREENING  
@ NMSU Project coordinator, David Boje  
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<http://peaceaware.com/sustainability/>



Greening the Curriculum

Thinking About A Greener Future

Ask Us About Minor in Sustainability...