

Green Academic Programs

Special Report

Greening Education: The Impact of Sustainability on Academic Programs

The defining characteristic of a modernized and prosperous economy is the quality of its labor force.

A nation's workforce ultimately determines the rate of technological progress, economic growth, innovation, and aggregate standard of living. It is why advanced economies value the productive use of human capital.

And at the source of a nation's labor supply is its educational foundation — the universities and trade schools that prepare participants to enter into the workforce.

Despite the continued economic contraction and net reduction in investments, the clean energy sector has fared better than most. Although investment in clean energy remains modest compared to its expected potential in the coming years, debt and equity markets are still willing and able to finance the needed capital investments for commercially proven clean energy technologies.

This reality, among others, indicates the market's willingness to invest in long-term sustainability business ventures as a means to enhance profitability and technological advancement.

With the increased dominance of clean energy in today's international economy, a focus on sustainability and economics is pivotal.

To succeed, modernized economies will need to instill within graduates an understanding of the importance of sustainability for the coming decades — namely that economic growth and the emergence of clean energy is intrinsically linked. A failure to acknowledge this inherent reality will result in a loss of competitiveness in the international marketplace.

So, where's the action then?

With the harsh reality of high unemployment, we must focus our efforts on where the quality jobs will be tomorrow — and not lament over the jobs we've lost, and are unlikely to return.

Moreover, we must also consider that how we've conducted business in the past — with little or no regard for sustainability — will no longer be acceptable.

The triple bottom line (the financial, social and environmental effects of a company's policies and actions that determine its viability as an environmentally and economically sustainable organization) is quickly becoming the standard, and those who ignore this reality will do so at their own peril.

For this reason, it is of great importance that we examine sustainability as the new frontier for wealth and value creation. Because at the end of the day, if you're not properly prepared for the future, you will fall victim to it...

So to give you a better understanding of the vast array of sustainability programs that exist, consider the following 86 academic institutions — ranging from associate degrees to doctorate programs.

Associate Degree Programs in Sustainability

Amarillo College (Amarillo, Texas): Associate in Applied Science, Renewable Energy
<http://www.actx.edu/wind/index.php>

Bronx Community College (Bronx, New York): Center for Sustainable Energy
<http://www.bcc.cuny.edu/CSE/>

Central Piedmont Community College (Charlotte, North Carolina): AAS in Sustainability Technologies
<http://www.cpcc.edu/cfs>

Coconino Community College (Flagstaff, Arizona): Associate of Applied Science in Alternative Energy Technology
<http://www.coconino.edu/collegcatalog/current/index.htm>

Columbia Gorge Community College (The Dalles, Oregon): Associate of Applied Science Degree in Renewable Energy Technology
<http://www.cgcc.cc.or.us/Academics/RenewableEnergyTechnology.cfm>

Cosumnes River College (Sacramento, California): AS in Environmental Studies and Sustainability
http://www.crc.losrios.edu/Events_and_Culture/Sustainability_at_CRC.htm

Eastern New Mexico University Roswell (Portales, New Mexico): AAS in Renewable Energy Technology
<http://www.roswell.enmu.edu/>

Indian Hills Community College (Ottumwa, Iowa): Associate in Advanced Technologies – Renewable Energy Technology
<http://www.ihcc.cc.ia.us/courses/tech/index.html>

Lane Community College (Eugene, Oregon): AAS in Sustainability Coordinator

<http://www.lanec.edu/advtech/SUST/>

Portland Community College (Portland, Oregon): AAS in Green Technology and Sustainability

<http://www.pcc.edu/programs/mechanical-engineering/>

Bachelor Degree Programs (Bachelor of Arts)

Acadia University (Nova Scotia, Canada): BA in Environmental and Sustainability Studies

<http://environment.acadiau.ca/>

Appalachian State University (Boone, North Carolina): BA in Sustainable Development

<http://www.susdev.appstate.edu>

Arizona State University (Tempe, Arizona): BA in Sustainability

<http://schoolofsustainability.asu.edu/future-students/undergraduate/bachelor-arts.php>

Baldwin Wallace College (Berea, Ohio): BA in Sustainability

<http://www.bw.edu/academics/sustainability/>

Columbia University (Manhattan, New York): BA Major and Concentration in Sustainable Development

<http://www.earth.columbia.edu/articles/view/28>

Dalhousie University (Nova Scotia, Canada): BA in Environment, Sustainability, and Society

<http://sustainability.dal.ca/>

Dominican University of California (San Rafael, California): BA in Sustainable Communities

<http://www.dominican.edu/academics/resources/catalog/2008-2010/pathways/sustainablecommunities.html>

Drew University (Madison, New Jersey): BA in Environmental Studies and Sustainability

<http://www.drew.edu/depts/depts.aspx?id=26243>

George Mason University (Fairfax, Virginia): BA in Environmental and Sustainability Studies

<http://sustainablestudies.gmu.edu/>

Johns Hopkins University (Baltimore, Maryland): BA in Global Environmental Change and Sustainability

<http://eps.jhu.edu/undergraduate/>

Lipscomb University (Nashville, Tennessee): BA in Sustainability Practice

<http://sustainability.lipscomb.edu/>

Meredith College (Raleigh, North Carolina): BA in Environmental Sustainability

<http://www.meredith.edu/biology/programs.htm#baenv>

Messiah College (Grantham, Pennsylvania): BA in Sustainability Studies

<http://www.messiah.edu/sustainability/academics.html>

Pennsylvania State University (State College, Pennsylvania): BA in Energy and Sustainability Policy

http://www.worldcampus.psu.edu/Bachelor-Degree-in-Energy-Sustainability-Policy_Overview.shtml

San Francisco State University (San Francisco, California): BA in Environmental Sustainability and Social Justice

<http://bss.sfsu.edu/envstudies/concentrations.html>

Stony Brook University (New York City, New York): BA in Sustainability Studies

http://www.stonybrook.edu/commcms/sustainability/majors_sus.html

Wilson College (Chambersburg, Pennsylvania): BA in Environmental Sustainability

<http://www.wilson.edu/wilson/asp/content.asp?id=3229>

Bachelor Degree Programs (Bachelor of Science)

Appalachian State University (Boone, North Carolina): BS in Sustainable Development

<http://www.susdev.appstate.edu/>

Arizona State University (Tempe, Arizona): BS in Sustainability

<http://schoolofsustainability.asu.edu/future-students/undergraduate/bachelor-science.php>

Dalhousie University (Nova Scotia, Canada): BS in Environment, Sustainability, and Society

<http://sustainability.dal.ca/>

Eastern Mennonite University (Harrisonburg, Virginia): BS in Environmental Sustainability

<http://www.emu.edu/applied-social-sciences/environmental-sustainability/>

Kean University (Union, New Jersey): BS in Sustainability Science

<http://www.kean.edu/~sels/sustainabilityscience.html>

Lipscomb University (Nashville, Tennessee): BS in Sustainable Practice

<http://sustainability.lipscomb.edu/page.asp?SID=193&Page=6833>

Maharishi University of Management (Fairfield, Iowa): BS in Sustainable Living

http://www.mum.edu/sustainable_living/

Mountain State University (Beckley, West Virginia): BS in Environmental Sustainability

<http://www.mountainstate.edu/programs/environmental-sustainability/environmental-sustainability.aspx>

Murdoch University (Perth, Australia): BS in Sustainable Energy Management

<http://www.see.murdoch.edu.au/areas/energy/undergrad/energybsc.html>

Philadelphia University (Philadelphia, Pennsylvania): BS in Environmental Sustainability

<http://www.philau.edu/schools/liberalarts/ugradmajors/envirosustain/IntroductiontoEnvironmentalSustainability.htm>

Rochester Institute of Technology (Rochester, New York): BS in Environmental Sustainability

<http://www.rit.edu/cast/cetems/bs-ms-in-environmental-sustainability-health-and-safety.php>

St. Petersburg College (St. Petersburg, Florida): BS in Sustainability Management

<http://www.spcollege.edu/bachelors/susmgt-bas/>

University of Florida (Gainesville, Florida): BS in Sustainability and the Built Environment

<http://www.dcp.ufl.edu/sustainability/bachelor/>

University of New Haven (New Haven, Connecticut): BS in Sustainability

<http://www.newhaven.edu/89939/>

Western New England College (Springfield, Massachusetts): BS in Sustainability

<http://www1.wnec.edu/artsandsciences/index.cfm?selection=doc.8258>

Masters Programs (Masters in Arts)

Antioch University (Los Angeles, California): MA in Urban Sustainability

<http://www.antiochla.edu/news-events/aula-announces-new-ma-urban-sustainability-program>

Antioch University (Keene, New Hampshire): MA in Advocacy for Social Justice and Sustainability

<http://www.antiochne.edu/es/eao/default.cfm>

Arizona State University (Tempe, Arizona): MA in Sustainability

<http://schoolofsustainability.asu.edu/future-students/graduate/master-arts.php>

Goucher College (Baltimore, Maryland): MA in Cultural Sustainability

<http://www.goucher.edu/x33261.xml>

Harvard University Extension School (Cambridge, Massachusetts): MA in Sustainability and Environment Management

<http://www.extension.harvard.edu/environmental-sustainability/>

Northern Arizona University (Flagstaff, Arizona): MA in Sustainable Communities

<http://home.nau.edu/sus/>

Ramapo College (Mahwah, New Jersey): MA in Sustainability Studies

<http://www.ramapo.edu/masters-sustainability/>

Saint Mary-of-the-Woods College (Vigo County, Indiana): MA in Earth Literacy

<http://www.smw.edu/index.php?CID=1>

Savannah College of Art and Design (Atlanta, Georgia): MA in Design for Sustainability

<http://www.scad.edu/design-for-sustainability/>

Saybrook University (San Francisco, California): MA in Organizational Systems, Leadership of Sustainable Systems Specialization

<http://www.saybrook.edu/phs/academicprograms/os/lss>

University of South Florida (Tampa, Florida): MA in Global Sustainability

<http://www.grad.usf.edu/global.asp>

Masters Programs (Masters in Science)

Arizona State University (Tempe, Arizona): MS in Sustainability

<http://schoolofsustainability.asu.edu/future-students/graduate/master-science.php>

California State Polytechnic University, Pomona (San Luis Obispo, California): MS in Regenerative Studies

<http://www.csupomona.edu/~crs/>

The City College of New York (Manhattan, New York): MS in Sustainability

<http://www.cuny.edu/academics/conted/green/courses.html>

Columbia University (Manhattan, New York): MS in Sustainability Management; MS in Earth Resources Engineering

<http://www.earth.columbia.edu/articles/view/2640>

<http://www.eee.columbia.edu/pages/academics/graduateprogram/MS-ERE.html>

Denmark Technical University (Copenhagen, Denmark): MSc in Wind Power

http://www.dtu.dk/English/education/MSc_Programs/Wind%20Energy.aspx

Illinois Institute of Technology (Chicago, Illinois): MS in Environmental Management and Sustainability

<http://www.stuart.iit.edu/graduateprograms/ms/environmentalmanagement/index.shtml>

Leiden University/Delft Technical University/Erasmus University (Netherlands): MS Industrial Ecology

<http://ie.leidendelft.nl/>

Lipscomb University (Nashville, Tennessee): MS in Sustainability

<http://sustainability.lipscomb.edu/>

Slippery Rock University (Slippery Rock, Pennsylvania): MS in Sustainable Systems

http://catalog.sru.edu/preview_program.php?catoid=16&poid=2603&returnto=286

University of Texas, Arlington (Austin, Texas): MS in Sustainability

<http://www.uta.edu/fortworth/degrees/sust/description.php>

Yale University (New Haven, Connecticut): Center for Business and the Environment: MBA, MEM, MF, MFS, MeSc

<http://cbey.research.yale.edu/>

Specialized Masters Programs

Blekinge Institute of Technology (Karlskrona, Sweden): Strategic Leadership Towards Sustainability (MSLS) and Sustainable Product-Service System Innovation (MSPI)

<http://www.bth.se/msls>

<http://www.bth.se/mspi>

Presidio Graduate School (San Francisco, California): MPA in Sustainable Management

<http://www.presidioedu.org/programs/mpa-sustainable-management>

University of Massachusetts (Boston, Massachusetts): Online Sustainable Development Program

http://www1.umassd.edu/sustainability/studies/academics_certificate_graduate.cfm

University of Saskatchewan (Saskatchewan, Canada): Master of Environment and Sustainability (M.E.S.) and Master of Sustainable Environmental Management (M.SEM.)

http://www.usask.ca/sens/graduate_programs/mes/index.php

http://www.usask.ca/sens/graduate_programs/msem/

Virginia Polytechnic Institute and State University (Blacksburg, Virginia): Executive Master of Natural Resources (XMNR)

<http://www.cnr.vt.edu/xmnr/>

Core Masters Programs in Europe

Ecole des Mines de Paris, France

<http://www.ensmp.fr/Accueil/>

Loughborough University, UK

<http://www.lboro.ac.uk/prospectus/pg/courses/dept/cd/id/index.htm>

<http://www.lboro.ac.uk/prospectus/pg/courses/dept/cv/sttp/index.htm>

<http://www.lboro.ac.uk/prospectus/pg/courses/dept/el/rest/index.htm>

University of Zaragoza, Spain

<http://wzar.unizar.es/servicios/ingles/insti/prese.htm>

Oldenburg University, UK

<http://www.biologie.uni-oldenburg.de/en/>

Hybrid Systems Specialization – Kassel University, Germany

<http://www.master.eurec.be/HS>

Wind Specialization – National Technical University of Athens, Greece

<http://www.master.eurec.be/W>

Photovoltaics Specialization – University of Northumbria, UK

<http://www.master.eurec.be/PV>

Bioenergy –Specialization – University of Zaragoza, Spain

<http://www.master.eurec.be/Bio>

Grid Integration Specialization – University of Zaragoza, Spain

<http://www.master.eurec.be/Bio>

Doctoral Degree Programs

Arizona State University (Tempe, Arizona): Ph.D. in Sustainability

<http://schoolofsustainability.asu.edu/future-students/graduate/phd.php>

Columbia University (Manhattan, New York): Ph.D. in Sustainable Development

http://sjpa.columbia.edu/academics/degree_programs/phd/index.html

Prescott College (Prescott, Arizona): Ph.D. in Sustainability Education

<http://www.prescott.edu/academics/phd/index.html>

Rochester Institute of Technology (Rochester, New York): Ph.D. in Sustainability

http://www.sustainability.rit.edu/degree_info.html

University of Alaska, Fairbanks (Fairbanks, Alaska): Ph.D. in Natural Resources and Sustainability

<http://www.uaf.edu/nrs/>

University of Rochester (Rochester, New York): Ph.D. in Solar Energy

<http://www.che.rochester.edu/>

University of Saskatchewan (Saskatchewan, Canada): Ph.D. in Environment and Sustainability

http://www.usask.ca/sens/graduate_programs/phd/index.php

Walden University (Minneapolis, Minnesota): Ph.D. in Local Government Management for Sustainable Communities

<http://www.waldenu.edu/Degree-Programs/Doctorate/32191.htm>

In addition to all of the aforementioned educational institutions, there are also disciplinary concentrations in...

- Agriculture
- Architecture
- Biology
- Business
- Chemistry
- Development Studies
- Economics
- Education
- Engineering
- Environmental Studies
- Interior Design
- Landscape Architecture
- Law
- Planning
- Urban Studies

It is clear that sustainability will impact not only science and engineering, but also every facet of the international marketplace, ranging from law to architecture.

Impactful Education for an Instrumental Field of Study

"It's important not to miss the forest for the trees," Nicholas Parker, executive chairman of the Cleantech Group, said in January 2009.

"In 2008, there was a quantum leap in talent, resources and institutional appetite for clean technologies. Now, more than ever, clean technologies represent the biggest opportunities for job and wealth creation."

Parker's words highlight the essence of what the new wave of sustainability is: The reality is that sustainability is becoming paramount in today's globalized and high-tech economy.

In order to survive, graduates will need to have at least a basic understanding of sustainable systems management, applying their knowledge to their specialized field of study. Whether it's engineering or economics, sustainability graduates will take the lead role in building on existing achievements in the international economy.

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