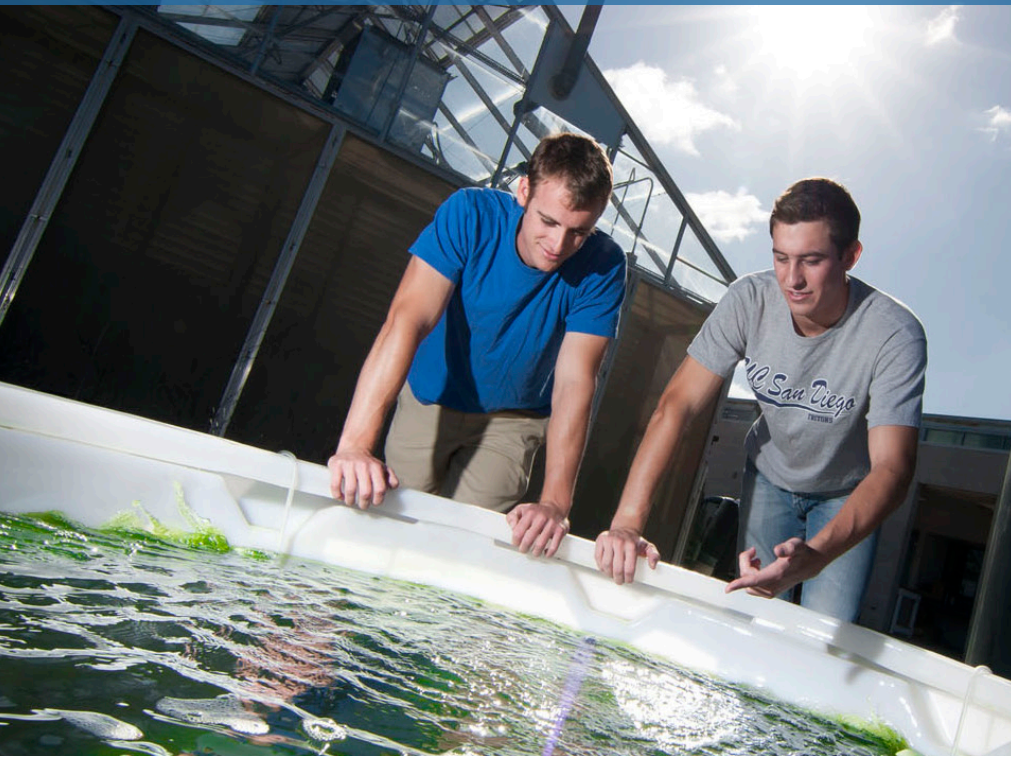


EDGE Biofuels Certificate Program

<http://algae.ucsd.edu/edge.html>



Why Biofuels?

Modern life is intimately linked to the availability of fossil fuels, which continue to meet the world's growing energy needs even though their use drives climate change, exhausts finite reserves and contributes to global political strife. Biofuels made from renewable resources, including algae, plant biomass, vegetable oils, and treated municipal and industrial wastes, will play a major role in providing alternatives for a more sustainable source of energy.

Erik Jepsen/UC San Diego Publications

Growing Opportunities in the Biofuels & Biomass Production Industry

A 2014 analysis, conducted by the San Diego County of Governments' (SANDAG) economic bureau, reports that the algae sector alone provides the San Diego region with 505 direct jobs and \$103 million in direct economic activity and \$175 million in total economic activity annually. With increasing pressure on fossil fuels and the movement to develop clean, renewable alternative energy, the biofuels sector is set to grow at an impressive pace.

As the biofuels industry continues to develop and mature, there will be an increasing demand for a well-trained workforce, including research and development scientists, engineers, field technicians, policy analysts, business development professionals and project managers. Training will also be required by the support industries, which will no doubt be springing up as the biofuels industry grows.

Program Overview

The Educating and Developing workers for the Green Economy (EDGE) Initiative was started with funding from the California Department of Labor to create and launch training programs in anticipation of the growth of the biofuels and industrial biotechnology sectors. Based on the EDGE Biofuels Science Technician Certificate run in 2011 and 2012, the California Center for Algae Biotechnology (Cal-CAB) and UC San Diego Extension launched two Specialized Certificates in Biofuels. Enrollment in individual Biofuels courses is also an option, space permitting.

Biofuels Science Certificate

The Biofuels Science Certificate is a hybrid program with online lecture courses followed by intensive laboratory courses completed at the UCSD campus during summer. It is aimed at training professionals for field and laboratory roles in the growing biofuels and biomass production industry. It provides students hands-on technical knowledge and experience in laboratory techniques used in biomass production, analysis and processing. Students choose from one of the following tracks: Molecular Biology, Aquatic Microbiology, or Analytical Chemistry.

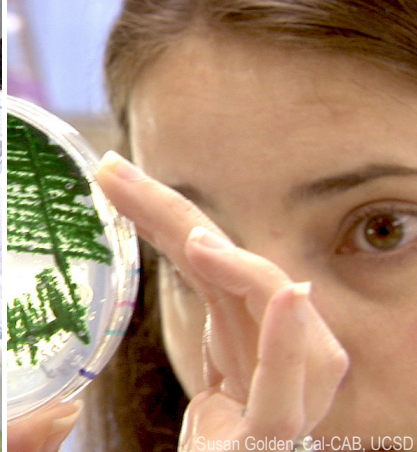
Biofuels Processes Certificate

The Biofuels Processes Certificate program is a fully online program that provides students with a comprehensive view of the landscape of biofuels and biomass research and production, analysis and downstream processing, as well as project management and other business skills. It is aimed at training professionals for roles in the growing biofuels and biomass production industry in project management, business development or other support roles not requiring direct, hands-on experience with experimental techniques.





Wendy Stegman, Cal-CAB, UCSD



Susan Golden, Cal-CAB, UCSD

Further information

<http://algae.ucsd.edu/edge.html>
<http://extension.ucsd.edu/biofuels>

Applications and Enrollment contact

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EDGE Initiative contact

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Admission Requirements and Applications

Admission to the Biofuels Science Specialized Certificate program requires an application and non-refundable application fee. For all tracks, it is required that you have taken courses in introductory biology, introductory chemistry and college-level mathematics. For the Analytical Chemistry track, you must also have taken a course in organic chemistry.

Admission to the Biofuels Processes Specialized Certificate program requires registration and non-refundable registration fee; however, it is strongly recommended that you have taken courses in introductory biology and introductory chemistry.

Summer Laboratory Logistics

Summer Lab courses will be held on the UCSD campus in La Jolla, California and will be 3-4 weeks in duration. For students not living in San Diego, a limited amount of discounted on-campus housing will be available during this time. UC San Diego Extension can also assist foreign students with visa issues and discounted on-campus housing for the summer lab courses.

Financial Assistance

Course pricing can be found at <http://extension.ucsd.edu/biofuels>.

Scholarships: The final round of applications for Legler Benbough EDGE Biofuels Certificate scholarships closes March 1, 2015. Applications can be submitted through the UC San Diego Extension website.

UCSD LAUNCH Program: Active UCSD undergraduate juniors and seniors have the opportunity to receive grant money to cover most course fees for the Biofuels certificates.

WIA Funding: The Workforce Investment Act (WIA) is a federally funded training and job program that creates a new approach, providing workforce investment activities through statewide and local systems. WIA funds are approved for the Biofuels Processes Certificate training program and can be available to unemployed or underemployed individuals who qualify. UC San Diego Extension is currently in the process of getting the Biofuels Science Certificate approved for 2015.

Other Assistance: For further information on financial assistance, please visit the UC San Diego Extension website.

Biofuels Processes Certificate Courses

Introduction to Biofuels	Online	3/30/15 - 6/12/15*
Downstream Processing and Refinement of Biofuels	Online	3/30/15 - 6/12/15
Project Management Essentials in Science and Technology	Online	1/5/15 - 3/21/15 or 7/13/15 - 9/11/15*
Biomass Production	Online	3/30/15 - 6/12/15

Biofuels Science Certificate Courses

Introduction to Biofuels	Online	3/30/15 - 6/12/15*
Biomass Production	Online	3/30/15 - 6/12/15
Biomass Production Laboratory	Lab course at UCSD	7/6/15 - 7/31/15*
Track Courses (select 1 track)		
<i>Molecular Biology Track</i>		
Genetics and Physiology of Photosynthetic Microorganisms	Online	3/30/15 - 6/12/15
Photosynthetic Microorganisms Molecular Biology Laboratory	Lab course at UCSD	7/6/15 - 7/31/15*
<i>Aquatic Microbiology Track</i>		
Aquatic Ecology	Online	3/30/15 - 6/12/15
Aquatic Microbiology Laboratory	Lab course at UCSD	7/6/15 - 7/31/15*
<i>Analytical Chemistry Track</i>		
Chemistry and Biochemistry of Biofuels	Online	3/30/15 - 6/12/15
Analytical Chemistry Laboratory	Lab course at UCSD	7/6/15 - 7/31/15*

* start/end dates TBD

