

REGISTRATION

Hands-on Short Course on Biogas Production and Utilization

Date: Flexible

(Please Type or Print Clearly) Name: _____

This name will appear on your certificate of Training

Title: _____

Company: _____ Mailing

Address: _____

City: _____ State: _____ Zip

Code: _____ Country: _____

Phone: _____ Fax: _____ E-

mail: _____

Name Card (you would like to be called): _____

Name and phone number to contact in case of emergency: _____

The registration fee per person is US \$1,500. Participants must inform BETA Lab of preferred exact dates of training program. Applications are accepted under the terms described in the accompanying short course program or a revised program agreed upon by participant and BETA Lab. Payment by check drawn on a U.S. bank or an International cashier's check in U.S. dollars must accompany applications.

Method of Payment (mark one)

Checks payable to Texas A&M AgrLife Research.

If paying with credit card please include type of card:

American Express Visa Master Card Diners Club

Card Number: _____

Name of Card Holder: _____ Exp. Date: _____

Signature: _____ Total Amount: \$ _____

Mail or fax this application to:

Cheryl Yeager
Business Coordinator
Biological and Agricultural Engineering Department (BAEN)
Texas A&M University
College Station, Texas 77843-2476 U.S.A.
Tel: 979-845-3994; Fax: 979-845-3936
E-mail: business@baen.tamu.edu

Hands-on Short Course on Biogas Production and Utilization (1 Week)

Prepared and Organized by the BioEnergy Testing and Analysis Lab (BETA Lab)
Biological and Agricultural Engineering Department
College of Agriculture and Life Sciences (COALS)
Texas A&M University
College Station, TX 77843-2476 U.S.A.

Training Pedagogy

This training program is a combination of Lectures and Computational Exercises in the morning and actual hands-on exercises in the afternoon. Each training lecture is loaded with engineering calculations and the chemistry of biogas production. At the end of the training program, the trainee will have learned all basic skills in becoming a biogas plant manager or process engineer. The trainee will also receive a hardcopy of complete set of training materials.

Schedule of Lectures/Computations and Lab Activities

Sunday or Day 0, Arrival of Trainee

Monday or Day 1

Morning Activities

Tour of Lab Facilities of Overview of Training Program

Lecture 1: Introduction to US Biogas Industry

Lecture 2: Introduction to Biogas Production

Computation 1: Chemistry Computations and Yield Prediction and Sizing of Plants

Afternoon Activities

Lab 1: Batch Biogas Reactor Experiment

Tuesday or Day 2

Morning Activities

Lecture 3: Analytical Equipment for Full-scale Operation of Biogas Facilities

Lecture 4: The Various Biogas Digester Designs in the US and Europe

Computation 2: Reactor Design Calculations

Afternoon Activities

Lab 2: Biogas measurements using gas chromatography

Wednesday or Day 3

Morning Activities

Lecture 5: Design of Small and Large-Scale Biogas Digester and 1st and 2nd generation digesters

Lecture 6: Environmental and Economic Issues of Anaerobic Digestion Systems

Computation 3: Design calculations for 1st and 2nd generation digesters

Afternoon Activities

Lab 3: Digester Designs: 1st and 2nd generation biogas digesters

Thursday or Day 4

Morning Activities

Lecture 7: Commercial Equipment and Technology for Biogas Production:

Lecture 8: Advanced Biogas Production Processes and Co-digestion

Computation 4 Equipment Design and Control Systems Introduction

Afternoon Activities

Lab 4: Design of biogas clean-up studies (H₂S and CO₂ removal)

Friday or Day 5

Morning Activities

Lecture 9: Strategies for the Establishment of Small and Medium-Scale Biofuels Plant

Lecture 10: Design of Commercial Systems and Economics of Biogas Production

Computation 5: Development of Business Plan and Simple Economic Calculations and Projections

Afternoon Activities

Lab 5: Engine Performance and Emissions Studies

Saturday or Day 6

Field Visit and Tour:

- a. Visit a Commercial Biogas facility (Sanderson Farms, Texas)
- b. Awarding of Certificates

Summary of Training

Time	Day of the Week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AM	Arrival of Trainee	Tour/Lecture 1	Lecture 3	Lecture 5	Lecture 7	Lecture 9	Tour of
		Lecture 2	Lecture 4	Lecture 6	Lecture 8	Lecture 10	Commercial
		Comp 1	Comp 2	Comp 3	Comp 4	Comp 5	Facility
		Lunch Break					
PM		Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Awarding
		Biogas	Biogas	Digester	Biogas	Engine	and Trainee
		Production	Analysis	Designs	Clean-up	Testing	Departure

For additional technical information, write, call, fax or e-mail to:

Dr. Sergio C. Capareda

Head, BioEnergy Testing and Analysis Lab

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College of Agriculture and Life Sciences (COALS)

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