

Registration Information

* \$1,000 Early-bird Registration Fee (US)
by June 26, 2009

* \$1,100 Regular Registration Fee (US)

You will receive a confirmation email within four weeks of registering. Payment in full is due by the start of the short course. Cancellations received after July 31, 2009, will be assessed a \$50 fee. The remainder of the registration fee will be refunded. No cancellations or refunds will be allowed after the short course starts. Registration fee will be completely refunded if the short course is filled or cancelled. Approximately \$200 of the registration fee will go toward food functions (continental breakfasts, scheduled breaks, and group luncheons) at this short course. This information is being provided for tax reporting purposes. Hotel rooms and other meals are not included in the registration fee.

Short Course Schedule

Participants may pick up their short course materials at the short course location (IGP Conference Center, 785-532-4070; www.ksu.edu/igp) starting at 8:00 a.m. on Tuesday, August 11. The short course will consist of a series of lectures beginning at 8:30 a.m. each day. There will be afternoon laboratory sessions on Tuesday and Wednesday, and an interactive business planning session on Friday afternoon. On Thursday participants will go on a field trip to the extrusion equipment manufacturing facilities of Wenger Manufacturing in Sabetha, KS. Sessions conclude at approximately 5:00 p.m. each day.

Hotel Information

Manhattan Clarion

530 Richards Drive, Manhattan KS
Phone: 785-539-5311

*Single/Double Room - \$76.00 + tax

A block of rooms has been reserved at the Clarion at a special rate until July 11, 2009. Make your reservation directly with the hotel, and mention that you are with the IGP Extrusion Short Course in order to obtain the special rate. The hotel will provide transportation to and from the course location, IGP Conference Center.

Registration Discounts!

If two or more people from the same company or institution enroll in this short course, each is entitled to a 10% discount off the registration fee. Your registration forms MUST be submitted together in order to receive the discount. Students who attend this short course will receive a 20% discount when they enclose a written endorsement of their student status from a professor in their department.

About the International Grains Program (IGP)

KSU's International Grains Program is part of the Dept. of Grain Science and Industry. IGP is designed to educate domestic & foreign business leaders and government officials about US grains and oilseeds through technical training and assistance programs in storage and handling, milling, marketing and processing. A \$4 million IGP Executive Conference Center located in the new Grain Science and Industry complex provides world-class meeting and instructional facilities.

Questions or Special Needs?

KSU is dedicated to making short courses accessible to all persons. Please contact one of the following if you have a special dietary need or are physically limited:

Anita McDiffett (almgret@ksu.edu)
Dept. of Grain Science and Industry
Phone: 785-532-4080/Fax: 785-532-4017

OR

Dr. Sajid Alavi (salavi@ksu.edu)
Dept. of Grain Science and Industry
Phone: 785-532-2403/Fax: 785-532-4017

Who Should Attend?

Food processors who want training in fundamentals and operations, entrepreneurs who desire to set up an extrusion-based business and would like to develop a business plan, and researchers and students interested in learning the latest trends in extrusion processing. The course is tailored for U.S. as well as international participants, and presents an excellent opportunity to develop contacts with experts and industry people from all over the world.

Comments from past participants:

"Every aspect was informative and some sections gave in-depth knowledge on application/processing... I have several suggestions/recommendations to take back to my company."

"This short course was really wonderful. Please tell me every time whenever these type of courses (are) held. I'll be grateful to join them."

"Awesome! Real world case studies (in the business planning session) are great. This separates this extrusion course from any other I have attended. Perfect!"



"I had fun and learned a lot (at the hands-on sessions). I was able to adjust fat, BPV (back pressure valve), and RPM (screw speed)."



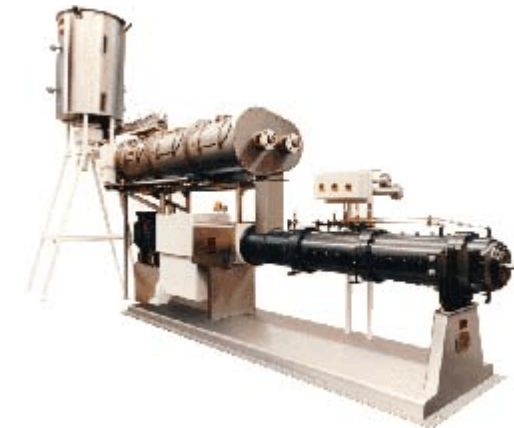
"Good hands-on experience with the extruders."

"I really enjoyed the class overall and will recommend it to all of my colleagues."

Extrusion Processing: Technology and Commercialization

August 11-14, 2009

IGP Conference Center
Dept. of Grain Science & Industry
Kansas State University
Manhattan, Kansas USA



An International Grains Program Short Course

Short Course Description

This course covers the underlying principles of extrusion processing from raw material selection and equipment to post-processing operations and control systems. Lectures will address a diverse range of extruded products including breakfast cereals, snacks, petfood, and feed for poultry, animal and aquatic species. A substantial portion of the course will be devoted to business planning and the commercialization aspects of setting up an extrusion plant. Lab sessions with hands-on experience with pilot-scale extrusion equipment will be an important part of this short course.

The course is jointly organized by the Dept. of Grain Science & Industry and Dept. of Agricultural Economics at Kansas State, with active participation by regional industry partners. The extrusion lab at Kansas State, which is part of the Grain Science Dept., has a strong emphasis on service, research and teaching. The extrusion pilot lab is primarily housed in the new Bioprocessing and Industrial Value-Added Program building, and has a variety of facilities including pilot-scale twin and single screw extruders and a pilot-scale gas-fired dryer.



Learn Basics of Extrusion Technology and Business Aspects

Extrusion processing of food and feed products is a multi-billion dollar industry in the US and Europe and is emerging in the rest of the world. This short course will cover the state-of-the-art technology including different types of extruders, dryers and control systems. Processing of various food, petfood and feed products will also be described. The intricacies of setting up an extrusion-based business will be addressed including capital decision-making and strategic planning. Case studies will be conducted with emphasis on both US and developing world markets.

Speakers

Sajid Alavi, *Associate Professor*
Grain Science and Industry, KSU

Vincent Amanor-Boadu, *Assistant Professor*
Agricultural Economics, KSU

Fadi Aramouni, *Professor*
Animal Sciences, KSU

Michael Bachelor, *Engineer*
Bachelor Controls, Inc., Sabetha, KS

Kaleb Beyer, *Technical Center Manager*
Wenger Manufacturing, Inc., Sabetha, KS

Girish Ganjyal, *Principal Scientist*
MGP Ingredients, Inc., Atchison, KS

Douglas Hanify, *Director of Technology*
Spray Dynamics, Ltd., St. Clair, MO

Carl Hoseney, *President*
R&R Research Services, Inc., Manhattan, KS

Spencer Lawson, *Technical Service*
Wenger Manufacturing, Inc., Sabetha, KS

Eric Maichel, *Extrusion Lab Operations Manager*
Grain Science and Industry, KSU

Brian Plattner, *Process Engineering Manager* Wenger
Manufacturing, Inc., Sabetha, KS

Brad Strahm, *Principal*
The XIM Group, LLC, Sabetha, KS

Bhadriraju Subramanyam, *Professor*
Grain Science and Industry, KSU



Course Outline

Day 1 – August 11 (Tuesday)

8:00 am: Registration; Continental Breakfast
8:30 am

- Ingredient Functionality
- Extrusion Hardware and Design
- Extruder Operation and Process Variables
- Extrusion Applications - Feed & Petfood

12 Noon: Group Luncheon

1:00 pm

- Drying and Toasting
- Hands-on Session on Pilot-Scale Extruders
- Campus Tour

6:00 pm: Banquet

Day 2 – August 12 (Wednesday)

8:00 am Continental Breakfast

8:30 am

- Principles of Die Design
- Extrusion Applications - Food
- Coating of Snacks and Cereals
- Extrusion Control Systems

12 Noon: Group Luncheon

1:00 pm

- Extrusion Troubleshooting
- Hands-on Session on Pilot-Scale Extruders

Day 3 – August 13 (Thursday)

8:00 am Continental Breakfast

8:15 am Textured Soy Protein

10:00 am Instrumental/Analytical Techniques

11:00 am Field trip to Wenger Manufacturing

Day 4 - August 14 (Friday)

8:00 am Continental Breakfast

8:30 am

- Sensory Aspects of Extrusion Products
- Plant Sanitation and Pest Management
- Overview of the Product Development Process
- Business Plan: Capital Decision Making I

12 Noon: Group Luncheon

1:00 pm

- Business Plan: Capital Decision Making II
- Business Plan: Strategic Planning
- Case Study and Active Interaction

Registration Form

Register me for the Extrusion Processing: Technology and Commercialization Short Course scheduled for August 11-14, 2009, at KSU:

\$1,000 Early-bird Registration Fee (US)

\$1,100 Regular Registration Fee (US)

Payment Options

- Purchase Order # _____
- Check or money order payable to:
Grain Science and Industry
- VISA MasterCard American Express
(circle one)

card number

Expiration Date: _____/_____/_____

Signature _____

Name _____

First name for badge _____

Title _____

Company/Institution _____

Address _____

City, State _____

Zip, Country _____

Phone _____

Fax _____

Email _____

Return this form with your payment to:

Ms. Anita McDiffett
Dept. of Grain Science & Industry
Kansas State University
201 Shellenberger Hall
Manhattan KS 66506-2201 USA
Fax: 785-532-4017
almgret@ksu.edu