Registration Information

* $1,100 Early-bird Registration Fee (US) by June 7, 2013
* $1,200 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 26, 2013, 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 (scheduled breaks and group luncheons) at this short course. A small portion of the course fee may be used for providing souvenirs for the participants. 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 7:30 a.m. on Tuesday, August 13. The short course will consist of a series of lectures beginning at 8:00 a.m. each day. There will be afternoon lab sessions on Tuesday and Wednesday, and an interactive sensory evaluation and business planning session on Friday. 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

Holiday Inn at the Campus
1641 Anderson Avenue, Manhattan KS
Phone: 785-539-7531
*Single/Double Room - $99.95 + tax
A block of rooms has been reserved at the Holiday Inn at the Campus at a special rate until July 21, 2013. Make your reservation directly with the hotel, and mention that you are with the KSU Grain Science 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 organization enroll, each is entitled to a 10% discount. Registration forms MUST be submitted together in order to receive the discount. College students will receive a 20% discount on providing written endorsement of student status from a professor in their department. Students have the option of receiving two KSU Division of Continuing Education credits. Tuition and DCE charges will apply in that case, in addition to the short course fee.

About the International Grains Program (IGP)

KSU’s International Grains Program is part of the Dept. of Grain Science and Industry. IGP provides technical training and assistance programs for domestic & foreign business leaders in the areas of storage and handling, milling, marketing and processing of grains and oilseeds. 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 (galavi@ksu.edu)
Dept. of Grain Science and Industry
Phone: 785-532-2403/Fax: 785-532-4017
www.grains.ksu.edu/extrusion

Who Should Attend?

Technical and managerial personnel in the food, pet food, and feed industries and ingredient companies desiring training in fundamentals and operations, entrepreneurs who want to set up an extrusion-based business and would like to develop a business plan, and researchers interested in learning the latest trends in extrusion processing. The course is tailored for US 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.”
“An excellent short course. I would love to recommend (this to) anyone... for an enrichment of fundamentals (of extrusion).”
“Very good high level overview (of ingredient functionality).”
“Good examples and practical problems (covered under troubleshooting).”
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, textured soy protein, pet food, 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 and 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 Kansas State extrusion lab has a strong emphasis on service, research and teaching and is primarily housed in the new Bioprocessing and Industrial Value-Added Program building. It has a variety of facilities including lab and 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, pet food and feed products will be described. Participants will be exposed to sensory evaluation of foods, a critical step in the product development process, through a special hands-on lab session. 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
Koushik Adhikari, Associate Professor
Human Nutrition, KSU
Sajid Alavi, Associate Professor
Grain Science and Industry, KSU
Vincent Amanor-Boadu, Associate Professor
Agricultural Economics, KSU
Fadi Aramouni, Professor
Animal Sciences and Industry, KSU
Michael Bachelor, Engineer
Bachelor Controls, Inc., Sabetha, KS
Topher Dohl, Research Coordinator
Wenger Manufacturing, Inc., Sabetha, KS
Keith Erdley, Drying Technical Service
Wenger Manufacturing, Inc., Sabetha, KS
Douglas Hanify, Director of Technology
Spray Dynamics, Ltd., St. Clair, MO
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
Bhadraju Subramanyam, Professor
Grain Science and Industry, KSU

Course Outline
Day 1 – August 13 (Tuesday)
7:30 am: Registration
8:00 am
• Ingredient Functionality
• Extrusion Hardware and Design
• Extrusion 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
6:00 pm: Banquet

Day 2 – August 14 (Wednesday)
8:00 am
• Extrusion Applications - Food
• Coating of Snacks and Cereals
• Extrusion Control Systems
• Extrusion Troubleshooting
12 Noon: Group Luncheon
1:00 pm
• Principles of Die Design
• Hands-on Session on Pilot-Scale Extruders

Day 3 – August 15 (Thursday)
8:00 am
Textured Soy Protein
10:00 am Instrumental/Analytical Techniques
11:00 am Field trip to Wenger Manufacturing

Day 4 - August 16 (Friday)
8:00 am
• Overview of the Product Development Process
• Sensory Aspects of Extrusion Products
• Plant Sanitation and Pest Management
12 Noon: Group Luncheon
1:00 pm
• Business Plan: Capital Decision Making
• 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 13-16, 2013 at KSU:

$1,100 Early-bird Registration Fee (US)
$1,200 Regular Registration Fee (US)

Payment Options
• Purchase Order #________________________
• Check or money order payable to:
  Grain Science and Industry
(circle one)

Expiration Date: __________/___________
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