Program Approval

I. General Information

A. Institution Kansas State University

B. Program Identification

Degree Level:	Associate
Program Title:	Food and Feed Manufacturing
Degree to be Offered:	Associate of Applied Science
Responsible Department or Unit:	College of Agriculture/Department of Grain Science and Industry
CIP Code:	1.1002 Food Technology and Processing
Modality:	Hybrid
Proposed Implementation Date:	Fall 2025

Total Number of Semester Credit Hours for the Degree: 60

II. Clinical Sites: Does this program require the use of Clinical Sites? No

III. Justification

The demand for a skilled workforce to fill supervisory, operational, and technical roles in the milling, baking, feed, and pet food industries is immense, and no other institution in the United States is meeting this need comprehensively. Currently, Kansas State University trains leaders for these industries. However, the creation of an Associate of Applied Science (AAS) degree in food and feed manufacturing would directly address the industry's labor shortages by providing practical, targeted education.

This program would serve two important demographics. First, it would offer a pathway for existing industry professionals seeking to enhance their knowledge and skills while maintaining their current employment. With the flexibility of an online AAS program and core courses designed as five-week online courses or one-week in-person practicums, these professionals can advance their careers with minimal disruption to their work schedules. Second, the program would appeal to students who prefer to enter the workforce quickly through a two-year technical degree, rather than pursuing a traditional four-year degree. These graduates would be well-prepared to step into the workforce immediately, filling critical roles in feed manufacturing and related fields.

Having more educated and highly qualified employees directly benefits the industry. A more skilled workforce leads to greater operational efficiency, innovation, and overall success for companies in this sector.

IV. Program Demand

A. Survey of Student Interest

A survey was not conducted to address student demand. However, an industry survey was conducted to seek guidance on the development of this program. The survey received 78 responses across the Feed, Pet Food, Milling, Baking, and Grain Elevator industries. The industry response provided support for this program in training areas of industry knowledge, quality, management, leadership, equipment identification/operation, basic/applied math, ingredient identification, written communication, oral communication, computer application, data management, supervision, employee safety, regulatory, equipment & facility maintenance, food/feed safety. See Appendix I for industry support letters.

B. Market Analysis

The industry market analysis report was conducted by the K-State Market Intelligence & Analysis Team. The data in this report is from Lightcast™, a labor market analytics company that curates and maintains comprehensive labor market data sets. The degree completion data are from IPEDS, reported by CIP code.

Labor data is from Quarterly Census of Employment Wages from the Bureau of Labor Statistics and Bureau of Economic Analysis. The regions analyzed include: Arkansas, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Texas. To provide further analysis in food and feed manufacturing, we used five metrics:

- Regional Unique Job Postings (2019-2023)
- Projected Industry Growth (2023-2032) • Top Ten Job Titles (2023)
- Top Ten Companies by Unique Job Postings (2023)
- Example Job Postings with Company, Location, and Salary Information (2023)

The five industries reviewed are:

1. Grain Processing Industry
2. Flour and Grain Milling Industry
3. Feed Industry
4. Baking Industry
5. Pet Food Industry

Completions for associate-level programs in grain/feed processing increased nationwide from 2013 to 2022 (IPEDS). Nationally, total completions fluctuated but increased over 350% during that time. Outside of 2016, there were zero online program completions nationwide and within the nine-state region. Although total nationwide completions are growing, the same is not true for the nine-state region (Arkansas, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, Texas) which decreased 66.7% from 2013 to 2022. In 2022, associate degrees accounted for 27 completions, while there were 56 bachelor's completions and 86 awards of less than one year. Only one institution in Kansas, Garden City Community College, reported associate degree completions in 2022 under the 01.0401 CIP code.

Job postings were filtered to include data on Feed Mill Operators, Feed Mill Managers, and Feed Mill Supervisors, the three job titles that we found were most relevant. The nationwide job postings growth for these positions has been over 41% since 2019, but the overall number of jobs is not very high. Feed Mill Operators was the job title with the most postings, tallying 493 last year. Feed Mill Operators also had the largest percent growth (66.6%) in postings from 2019 to 2023. The top employers recruiting for these types of positions include cattle feeders and large companies in the food industry like Tyson Foods, Con Agra, and Smithfield Foods.

A data point of note is that Iowa had the most job postings in the U.S. in 2023, with the rest of the Central U.S. showing demand for these workers, as well. Some of the top requested skills within job postings include agriculture, milling, warehousing and automation. A few of the top growing skills from 2023 revolve around workplace safety. They included hazard analysis and critical control points, preventative maintenance, and safety culture.

There were no associate degrees in grain science, milling, or a combination of the two in the market research scan of similar programs in the nation. The list of similar programs includes three certificates, one minor, and a Career Studies Certificate program. Of these five programs, four of them are in feed milling and only one is offered online. Based on this scan, there is little to no competition in the associate's degree programs in grain or milling science.

V. Projected Enrollment for the Initial Three Years of the Program

Year	Total Headcount Per Year		Total Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	10	20	150	120
Year 2	20	30	300	180
Year 3	35	40	525	240

VI. Employment

Data from the K-State Market Intelligence & Analysis team using Lightcast Analyst tool determined the current employment opportunities for Unique Job Postings within a 9-state region from 2019-2023. Unique job postings were searched for soybean and other oilseed processing, fats and oils refining and blending, flour milling, rice milling, wet corn milling, breakfast cereal manufacturing, animal food manufacturing, dog or cat food manufacturing, bread and bakery product manufacturing. Across these unique job postings within a 9-state region there were 1,074 jobs posted in 2023.

- For the grain processing industry (soybean and other oilseed processing and fats and oils refining and blending), in 2023 there were 80 total unique postings with +122.2% change in 5-year regional postings and a median salary of $64,800. Example employment opportunities included industrial technicians and operations assistant.
- For the flour and grain milling industry (flour milling, rice milling, wet corn milling, breakfast cereal manufacturing), in 2023 there were 111 total unique postings with +311% change in 5-year regional postings and a median salary of $58,900. Example employment opportunities included maintenance technician-millwright and maintenance control specialist.
- For the feed industry (animal food manufacturing), in 2023 there were 459 total unique postings with +59.4% change in 5-year regional postings and a median salary of $59,600. Example employment opportunities included Millwright/maintenance mechanic, processing technician, and laboratory technician.
- For the pet food industry (dog or cat food manufacturing), in 2023 there were 124 total unique postings with +359.3% change in 5-year regional postings and a median salary of $57,300. Example employment opportunities included filler operator, laboratory technician, and automation controls technician.
- For the baking industry (bread and bakery product manufacturing), in 2023 there were 300 total unique postings with +10% change in 5-year regional postings and a median salary of $64,300. Example employment opportunities included production supervisors, maintenance lead, mechanical/electrical technician.

VII. Admission and Curriculum

A. Admission Criteria

Qualified Admission criteria are used, as this program does not have separate admission requirements.

B. Curriculum

The 61-credit AAS in Food and Feed Manufacturing program is designed to equip students with the knowledge and skills necessary for a successful career in the grain, food, and feed industries. The curriculum prepares learners for both entry-level and supervisory positions in these rapidly advancing sectors. In addition to offering a solid technical foundation in areas such as ingredient purchasing, equipment maintenance, and operation, and facility oversight, the program emphasizes invaluable hands-on learning experiences.

This curriculum accommodates two types of learners: 1) current industry professionals seeking to earn their degree online while maintaining their jobs, and 2) traditional students aiming to complete a two-year technical degree to quickly enter the food and feed manufacturing or grain processing workforce. To support these diverse needs, core classes are structured in 5-week, one-hour modules, allowing for greater flexibility.

Beyond technical training, our curriculum addresses additional skills that industry surveys indicate employers seek in candidates. Applied skills and professional specialization are emphasized, particularly through courses focusing on employee safety, food and feed safety, computer applications, and specialized areas relevant to food and feed manufacturing, including agronomy, animal science, agricultural safety, mechanical systems, entomology, food science, and others. Flexibility is also built into the specialization electives to allow for high school students to take advantage of completing targeted courses for free while in high school to help meet degree requirements. The flexible "Specialization Electives" component reflects the diverse areas within modern food and feed manufacturing, ensuring that our approach is tailored to the

various career possibilities available to AAS graduates.

The program requires a total of 18 credits in core Food and Feed Manufacturing (FFM) major courses, supplemented by three sections within the major support courses: 9 credits focused on specialization, 6 credits dedicated to major support (computer applications and employee safety), and 12 credits in management electives. The content needed for the 18 credit hours of core FFM major courses currently resides within the Department of Grain Science and Industry at Kansas State University. This content will be retooled for online delivery and to focus on the key pieces of technical education needed for this target audience.

Recognizing the importance of business operations and management skills, we require students to complete 12 credits in "Management Electives." Additionally, effective communication and applied mathematics are critical skills sought by employers, leading to requirements in the KBOR general education curriculum, including courses in English, Communication, and Math.

The remaining credits consist of 4-5 credits in Natural Science and Physical Sciences and 3 credits in Arts and Humanities or Social and Behavioral Science, providing a well-rounded education. These courses lay a solid foundation in basic science and the humanities while allowing students to explore a wide range of topics that can significantly influence their career trajectories.

In addition to the AAS FFM degree, FFM certificates will be in place by Fall 2025. These certificates are designed to provide students with a credential they can present to employers even before completing their associate's degree. This is particularly valuable for students who may need to pause their education or want to demonstrate their skills to prospective employers partway through their studies. Additionally, all course requirements for the certificate will apply directly toward the completion of the Associate of Applied Science (AAS) degree. Offering these certificates, along with free high school courses through Excel in CTE (formerly SB155) and Career Clusters and Pathway: Ag Technology and Mechanical Systems (proposed to be transferable to K-State as 3 credits of AGTEC 111), strengthens the stackable credential pathway (see Appendix II), recognized by the Kansas Board of Regents (KBOR), helping students build their academic and professional profiles step-by-step. For the non-traditional place-bound student, we also hope to develop microcredentials in the future that will not only enhance skills in their current position through professional development, but that will also provide a pathway of stackable credentials (see Appendix III) that could lead to a certificate or ultimately an associate’s degree.

Year 1: Fall **SCH = Semester Credit Hours**

Course #	Course Name	SCH
CORE 1	K-State CORE 1 – English - Select 1 course from the list (i.e. ENGL 100 - Expository Writing I)	3
CORE 3	K-State CORE 3 - Mathematics & Statistics - Select 1 course from the list (i.e. STAT 225 - Intro to Statistics)	3
ASMS 120	Intro to Food & Feed Manufacturing Employee Safety	1
ASMS 220	Employee Safety in Grain Handling Facilities	1
ASMS 221*	Safety Applications Practicum	1
FFM 101	Orientation to Food & Feed Manufacturing	1
FFM 110	Intro to Grain & Food Manufacturing Industries	1
FFM 111	Intro to Feed & Pet Food Manufacturing Industries	1
FFM 120	Ingredient ID & Quality: Cereal Grains	1
FFM 121	Ingredient ID & Quality: Oil Seeds & Legumes	1
FFM 122	Ingredient ID & Quality: Co-products & Additives	1
Select 1 course:		
FFM 159*/169*/179*	Practicum: Intro to Milling/Intro to Baking/Intro to Feed & Pet Food	1

Year 1: Spring

Course #	Course Name	SCH
CORE 2	K-State CORE 2 - Communication - Select 1 course from the list (i.e. COMM 106 - Public Speaking I)	3
CORE 5 or CORE 6	K-State CORE 5 - Social & Behavioral Science *or* K-State CORE 6 - Arts & Humanities - Select 1 course from the list	3
CA Elective	Computer Applications Elective - ASI 290 or CIS	1-3
Select 1 group:		3
FFM 150/151/152	Milling: Preparing Grains/Milling Process/Milling Specialty Grains	
FFM 160/161/162	Baking: Bakery Ingredients/ Bakery Processes/Baking Products	
FFM 170/171/172	Feed & Pet Food: Feed Processing/Pet Food Processing/ Finished Feed and Pet Food Quality Assurance	
Specialization Elective Course	See Departmental List**	3

Year 2: Fall

Course #	Course Name	SCH
CORE 4	K-State CORE 4 - Natural & Physical Sciences - Select 1 course, with lab, from the list (i.e. AGRON 120 & 121, Crop Science)	4
LEAD 212 *or* MANGT 220	Introduction to Leadership Concepts or Principles of Management	3
FFM 210	Food & Feed Manufacturing Equipment Maintenance	1
Select 1 course:		
FFM 215/216/217	Maintenance Programs: Milling Specific/Baking Specific /Feed & Pet Food Specific	1
Select 1 course:		
FFM 225*/226*/227*	Equipment Maintenance Practicum: Milling/Baking/Feed	1
Specialization Elective Course	See Departmental List**	3
Management Elective Course	See Departmental List**	3

Year 2: Spring

Course #	Course Name	SCH
FFM 250	Advanced Food & Feed Manufacturing Management	1
Select 1 course:		
FFM 251/261/271	Advanced Management: Milling/Baking/Feed & Pet Food	1
Select 1 course:		
FFM 252*/262*/272*	Advanced Manufacturing Management Practicum: Milling/Baking/Feed & Pet Food	1
FFM 280	Intro to Food & Feed Safety	1
Select 1 course:		
FFM 285/287	Food Safety Principles in Milling and Baking/Advanced Feed & Pet Food Safety	1

Specialization Elective Course	See Departmental List**	3
Management Elective Course	See Departmental List**	3
Management Elective Course	See Departmental List**	3
Free Electives	If needed to reach 60 total hours	0-2

Total Number of Semester Credit Hours 60

**** Departmental List:**

Management Electives:		**12**
Select 1 Course:		
LEAD 212	Intro to Leadership Concepts	3
MANGT 220	Principles of Management	3
Select 9 Hours:		
ACCTG AGEC BUS ENTRP FINAN LEAD MANGT MIS MKTG SALES		
Specialization Electives:		**9**
Select 9 Hours:		
AGRON AGTEC ASI ASMS ATM ECET ENTOM FDSCI FFM FNDH GRSC IMSE MET		

VIII. Core Faculty

Note: *** Next to Faculty Name Denotes Director of the Program, if applicable
FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
Dr. Chad Paulk***	Associate Professor	Ph.D.	Y	Feed Science, Monogastric Nutrition, Ingredient Quality and Safety	0.17
New Program Coordinator	Instructor	TBD	N	Online Course Delivery	1.0
Jason Watt	Instructor	B.S.	N	9 years of experience in milling education and 7 years of practical milling industry experience	0.17
Aaron Clanton	Instructor	M.B.A.	N	5 years experience teaching at K-State and 20 years experience in the bakery industry and 13 years experience teaching all aspects of the AIB Internationals baking curriculum.	0.04
Fran Churchill	Instructor	M.S.	N	12 years of experience in milling education and 20	0.13

				years of practical milling industry experience	
Huseyin Dogan	Instructor	B.S.	N	Associate Engineer, 21 years experience teaching for the Department of Grain Science. Mechanical Engineer with 30 years experience in project management, design, power distribution, and trouble shooting.	0.08
Dr. Julia Pezzali	Assistant Professor	Ph.D.	Y	Pet Food Processing, Pet Food Nutrition	0.04
Paul Blodget	Instructor/Flour Mill Manager	B.S.	N	Current Instructor and Program Manager of Hal Ross Flour Mill. Over 20 years of practical milling experience	0.21
Dr. Mitch Ricketts	Professor	Ph.D.	Y	Agriculture Safety and Health; Board Certified Safety Professional, with over 30 years of experience in safety, health, and environmental management	0.10
Bakery Science Faculty	TBD	TBD	Y/N	A core Bakery Science Faculty member will have FTE repartitioned to account for this additional teaching responsibility.	0.29
Feed Science Faculty	TBD	Ph.D.	Y	A core Feed Science Faculty member will have FTE repartitioned to account for this additional teaching responsibility.	0.21
Pet Food Science Faculty	TBD	Ph.D.	Y	A core Pet Food Science Faculty member will have FTE repartitioned to account for this additional teaching responsibility	0.08

Number of graduate assistants assigned to this program ..... **[0]**

IX. Expenditure and Funding Sources

A. EXPENDITURES	First FY	Second FY	Third FY
Personnel – Reassigned or Existing Positions			
Faculty	$104,000		
Administrators *(other than instruction time)*		$65,000	$65,000
Graduate Assistants			
Support Staff for Administration (*e.g., secretarial*)			
Fringe Benefits *(total for all groups)*		$21,450	$21,450
Other Personnel Costs			

Total Existing Personnel Costs – Reassigned or Existing	$104,000	$86,450	$86,450
Personnel – New Positions			
Faculty			
Administrators *(other than instruction time)*	$65,000		
Graduate Assistants			
Support Staff for Administration (*e.g., secretarial*)			
Fringe Benefits *(total for all groups)*	$21,450		
Other Personnel Costs			
Total Existing Personnel Costs – New Positions	$86,450		
Start-up Costs - One-Time Expenses			
Library/learning resources			
Equipment/Technology			
Physical Facilities: Construction or Renovation			
Other			
Total Start-up Costs			
Operating Costs – Recurring Expenses			
Supplies/Expenses	$12,500	$12,500	$12,500
Library/learning resources			
Equipment/Technology			
Travel			
Other	$103,700	$103,700	$103,700
Total Operating Costs	$116,200	$116,200	$116,200
GRAND TOTAL COSTS	$306,650	$202,650	$202,650

B. FUNDING SOURCES *(projected as appropriate)*	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition / State Funds		$109,291	$194,294	$309,657
Student Fees				
Other Sources				
GRAND TOTAL FUNDING		$109,291	$194,294	$309,657
C. Projected Surplus/Deficit (+/-) (Grand Total Funding *minus* Grand Total Costs)		- $197,359	- $8,356	$107, 007

X. Expenditures and Funding Sources Explanations

A. Expenditures
Personnel – Reassigned or Existing Positions

The Department of Grain Science and Industry has 10 faculty with various extension and teaching responsibilities that adequately cover the diverse discipline. Therefore, all FFM course offerings are offered as part of current appointments. Percent time dedication varies with faculty member roles and ranges from 0.08 to 0.29 FTE.

- The First FY expense for $104,000 will be designated to cover the summer salary of 3 tenured track professors who are on 9-month appointments for course development. These will be a one-time expense.
- A total of 3 tenured track professors and 5 instructors will be reassigned to AAS FFM courses. With addition of the new workload policy at Kansas State University, there are gaps in teaching load responsibilities for these faculty that can be used to meet the AAS teaching needs. In addition, current online service courses, such as GRSC 101, will be removed and restructured as FFM 110, 111, 120, 121, 122.

Personnel – New Positions

One Program Coordinator will be hired as an administrator and content manager for the AAS in Food and Feed Manufacturing. The annual salary for the Program Coordinator will be $65,000. Fringe benefit of $21,450 were calculated at the standard university rate of 30%.

Start-up Costs – One-Time Expenses

As previously defined, the one-time expense will be related to personnel. A total of 3 tenured track professors and 5 instructors will be reassigned to AAS courses. With addition of the new workload policy at Kansas State University, there are gaps in teaching load responsibilities for these faculty that can be used to meet the AAS teaching needs. In addition, current online service courses, such as GRSC 101, will be removed and restructured as FFM 110, 111, 120, 121, 122.

Operating Costs – Recurring Expenses

We also require funds for supplies/expenses associated with office materials, instruction, IT support, and promotion and marketing activities ($12,500/yr). In addition, we will offer 10 practicum courses and this will require operation of the flour mill, baking lab, test kitchens, feed mill, and pet food processing labs. For each of these courses it will cost approximately $10,000 in operations and supplies (total $103,700 per year).

B. Revenue: Funding Sources
Student tuition revenue has been calculated at $404.78/credit hour – the standard in-state tuition rate for undergraduate courses. The total number of credit hours per year is based on the projected enrollment and anticipated credit hours for full-time and part-time students.

Fiscal year	Total credit hours	Cost per credit hour	Total revenue
First FY	270	$404.78	$109,291
Second FY	480	$404.78	$194,294
Third FY	765	$404.78	$309,657

C. Projected Surplus/Deficit
The projected surplus by year three reflects the difference between Total Funding and Total Expenses.

XI. References

U.S. Bureau of Labor Statistics. (n.d.) *Quarterly census of employment and wages*. Available from https://www.bls.gov/cew/

U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) (2022). Available from https://nces.ed.gov/ipeds/datacenter.

Dr. Kyle Coble
Director of Nutritional Services
JBS Live Pork, LLC
Greeley, CO

August 18th, 2024

Associate of Applied Sciences (AAS) in Food and Feed Manufacturing
Kansas State University
Manhattan, KS

Dear Department and Faculty Member(s):

I am writing this letter in support of your proposed development of the academic program and curriculum for an Associates Degree of Applied Sciences (AAS) in Food and Feed Manufacturing. This extended learning opportunity for many in our industry is needed, desired, and essential to the continuation of adding skilled labor to the feed manufacturing workforce.

Nearly 4 years ago, Dr. Chad Paulk, Dr. Charles Stark, and I develop the "JBS Master Milling Course". It covers the areas of basic feed milling, quality control, maintenance and even some personal development in feed milling. This was developed out of necessity to create growth opportunities for our front-line workers who were thirsty for a chance to move up in the business and for a better future that would accompany them for their lives beyond.

This reality of need unfortunately came full force before the program was developed. Just weeks prior to moving this concept into a reality, an employee of mine whom had been at the company for 42 years at the same mill, even after building it, said "my father told me all I would ever be was a feed mill operator and that was all I ever was. No one ever cared enough to develop me or help me fulfill my potential in an industry I loved". While this person was proud of their tenure, they were not happy with the outcome of their career – it had become a job they did for decades. Only having overseen the Feed Operations for JBS Live Pork for less than a year and our company only owning that location for slightly longer, it shook me to the core. From that point forward, I vowed to never put our employees in that position and born was the JBS Master Milling Course.

The course overall has been a success, but it has not been without its challenges. While post graduate trained and completing a PhD, I am not a trained educator and at times the development has struggled to keep pace. The demands of an industry job tug at time and priorities to keep the business going versus personal development is a reality. Students need prompt replies and consistent engagement. When we have had up to 25 students across 3 classes at one time, they need a professional that is an educator in the area of milling science and a program whose focus and core is exactly what this AAS would provide. To top this all, even after a monetary bonus was provided for class completions, most did not want to do "without getting a college degree".

Selfishly, I cannot explain in words what this would mean to JBS Live Pork's Feed Milling Team. It would expand our established program into an option that students and industry professionals could carry on with and add academic merit to their futures that allow them to turn a job into a career. This program would be one of a kind in our industry, and no one is better at that than Kansas State Grain Science.

I thank you for reading this letter and hearing our position as you deeply consider the futures and careers of not only our employees, but the industry and families they are made of.

Sincerely,
Kyle Coble
Dr. Kyle Coble

November 1, 2024

Faculty and Administration
Kansas State University
Manhattan, KS 66506

RE: Support for the Associate of Applied Sciences (AAS) in Food and Feed Manufacturing

Dear Faculty and Administration,

We are writing to express our strong support for the proposed development of the Associate of Applied Science (AAS) in Food and Feed Manufacturing curriculum at Kansas State University. This initiative will provide opportunities for potential students looking to enter the grain milling industry as a future career.

As both the food and feed manufacturing sectors continue to grow, a significant need has emerged for professionals adept in both technical and operational sides of running a mill. The AAS program aligns with this demand and provides instruction and experience in grain milling, preparing a pool of skilled employees ready to contribute effectively early in their careers.

Hill's Pet Nutrition acknowledges the potential this program holds. By offering this targeted training, current and future employees will be able to bring expertise to mills throughout Kansas, reflective of the state's position as a grain production leader.

Furthermore, the program supports local economies by sustaining the long-term viability of Kansas-based grain mills and other related food and feed manufacturing businesses. It provides students with pathways to gain education and hands-on experience, retaining talent within the state and providing a continuous pipeline of skilled workers.

Thank you for your consideration of this addition to Kansas State University's educational offerings. We eagerly anticipate the success of the AAS in Food and Feed Manufacturing program and are confident in the substantial impact it will have on the industry.

Sincerely,

Nicholas L. Rozzi, Ph.D.
Vice President, Product Development
Hill's Pet Nutrition
1035 NE 43rd Street
Topeka KS 66617

Dr. Chad Paulk
Associate Professor
Feed Science and Management in the Department of Grain Science and Industry
Kansas State University
Shellenberger 313
Manhattan KS, 66506

Proposed AAS in Food and Feed Manufacturing Program

Dear Dr. Paulk,

Founded in 1909, the American Feed Industry Association (AFIA), based in Arlington, Va., is the world's largest organization devoted exclusively to representing the business, legislative and regulatory interests of the U.S. animal food industry and its suppliers. The organization's membership is comprised of over 650 domestic and international companies that represent the total feed industry—manufacturers of commercial and integrated feed and pet food, ingredient suppliers, pharmaceutical companies, industry support and equipment manufacturers. AFIA's members manufacture more than 75% of the feed and 70% of the non-whole grain ingredients used in the country.

The AFIA was thrilled to hear that you are proposing to develop an Associate of Applied Sciences (AAS) in Food and Feed Manufacturing. An AAS degree in feed manufacturing will help meet some current needs in our industry labor requirements. There are existing industry professionals seeking to earn a degree online while maintaining their current employment. This type of program will help those individuals increase their knowledge base and advance their careers. There are also students that would like to complete a two-year technical degree and enter the workforce quickly rather than pursue a traditional four-year degree. The type of degree program that you are proposing to develop will help provide highly qualified potential employees to work in our feed manufacturing facilities. A more educated employee always equates to a more qualified employee. A more qualified labor force is good for our industry.

The AFIA whole-heartedly supports the development of this program!

Yours Sincerely,

Gary Huddleston

Gary Huddleston
Director of Feed Manufacturing and Regulatory Affair

American Feed Industry Association • 2101 Wilson Blvd., Suite 810, Arlington VA 22201 USA
T: (703) 524-0810 • F: (703) 524-1921 • afia@afia.org • afia.org

NORTH AMERICAN MILLERS' ASSOCIATION

The Link Between Grain and Goodness

August 30, 2024

Department of Grain Science and Industry
Kansas State University
Suite 201 Shellenberger Hall
1301 Mid-Campus Dr
Manhattan, KS 66506

Dear Department of Grains Science and Industry:

I am writing on behalf of the North American Millers' Association (NAMA) in support of the Kansas State University Department of Grain Science and Industry application to offer an Associate of Applied Science (AAS) in Food and Feed Manufacturing

NAMA represents millers of wheat, corn, oats, and rye across the continental United States, Puerto Rico, and Canada. Our members take raw grain and, through grinding and crushing, create flour and other products that are used to make favorite foods.

Kansas State University currently offers the only Bachelor of Science degree in milling in the United States. Our industry fully supports the current program, but we also recognize that the needs of today's learners and employers are broader than four-year degree programs.

As the only fully operational training center in the United States, Kansas State has a unique opportunity to utilize existing resources and staff to expand its mission and enrollment. Our hope is that currently working employees will be able to advance their careers by earning an AAS degree while working full-time. The program would also offer students from Kansas and around the country specialized training for jobs with excellent compensation and professional growth opportunities.

The milling industry, like other manufacturers located in rural America, must look at new ways to expand our talent pipeline. An AAS in Food and Feed Manufacturing offered by Kansas State could play an important role in workforce development for the future.

Sincerely,

Jane DeMarchi
President

1400 Crystal Drive, Suite 650 · Arlington, VA 22202

TEL: 202.484.2200 · namamillers.org · generalinfo@namamillers.org

Cargill® Helping the world thrive

October 4, 2024

Chad Paulk
Associate Professor, Department of Grain Science and Industry
Kansas State University

Dr. Paulk,

We appreciate the chance to express our support for the proposed Associate of Applied Science in Food and Feed Manufacturing (AAS). At Cargill, our values--do the right thing, put people first and reach higher--guide us in all aspects of our business. These values guide how we attract and retain the talent that we employ in our production facilities. We believe that it is in the best interest of our current and future team members to have access to a wide variety of educational opportunities. As we look at our talent in our food and feed production facilities, we recognize that not every supervisory and management position would require a traditional four-year degree. We do still value the investment that our team members make in their education and will continue to seek out employees with four-year degrees. At the same time, we also recognize the importance of education options that fit the life circumstances of our employees who do not wish or are not able to invest in a four-year degree.

The AAS program that you are proposing will be a valuable addition to the education options of our current and future employees. We could certainly see this as a degree track that would help us to meet the demands for entry level supervisory employees in our production facilities. We also appreciate the fact that this could be a great option for some of our current employees to further their education as they continue their employment. We appreciate the work that you and your department have done to propose this AAS program. Cargill is supportive of the development of such programs, and they will help to improve the ability of our team members to prepare for future roles and to grow in existing roles at Cargill.

Thank you for consideration of these comments and please let us know if you need anything else to support your efforts.

My Regards,

Scott J. Eilert

Scott J. Eilert, Ph.D.
VP, Responsible Sourcing Program Director
Cargill Protein and Salt

825 E. Douglas *Wichita, KS 67202* *316-291-2119*

Josh Flohr, Ph.D.

To the Department of Grain Science and Industry,

Seaboard Foods is a leading integrated food company in the United States, producing premium pork and other protein products for domestic and international markets. With our deep roots in the Midwest, particularly in Kansas, where many of our operations are based, we are committed to fostering strong relationships within the state. Our facilities in Kansas play a vital role in our supply chain, making it one of our key production hubs.

We are pleased to hear about your proposal to develop an Associate of Applied Sciences (AAS) in Food and Feed Manufacturing. This AAS degree will help address the current labor market needs in our industry, particularly by providing targeted education and hands-on training for students who are eager to join the workforce. Many individuals in the industry are seeking opportunities to advance their careers by enhancing their knowledge while continuing their employment. This program would be an excellent resource for such professionals to upskill and contribute even more effectively to their organizations.

Additionally, as a company with strong ties to Kansas, this program is especially valuable to us. By creating opportunities for Kansas students and professionals to receive technical education close to home, the program will help sustain a robust local labor force that can support the continued growth of the state's food and feed manufacturing industries. Furthermore, this program offers a valuable pathway for students aiming to quickly enter the workforce with a two-year technical degree. The skills and qualifications gained through this degree will prepare them to succeed in various roles within the feed manufacturing sector, ensuring that we have access to well-trained and educated employees ready to thrive in our Kansas facilities.

Seaboard Foods fully supports the development of this program. A better-educated workforce will directly benefit both our company and the broader Kansas economy. We are confident that this initiative will enhance the availability of qualified employees and contribute to the overall success of food and feed manufacturing operations across the country and within our state.

Sincerely,

Josh Flohr

Senior Director of Technical and Veterinary Services

Seaboard Foods

WAYNE SANDERSON FARMS
TOGETHER, WE MAKE CHICKEN AMAZING

August 29, 2024

To whom it may concern:

This letter is written in support of the proposed Associate of Applied Sciences in Food and Feed Manufacturing at Kansas State University. This proposed program offers the potential to positively impact and influence livestock, grain and feed manufacturing industries.

There is a large void in our industry of professionals that already possess technical skills and knowledge of grain and feed manufacturing. Therefore, it's difficult to easily find and place supervisory or managerial roles in mills. This program offers a great opportunity to offer additional training to current employees, as well as greater pool of talent in our industries.

I fully support the proposed program and the potential impact it will have.

Thanks,

Chance Williams, PhD
Senior Nutritional Services Director
Wayne-Sanderson Farms

Ardent Mills

August 26, 2024

Kansas Board of Regents
1000 SW Jackson Street, Suite 520
Topeka, KS 66612

Dear Members of the Kansas Board of Regents,

I am writing to express Ardent Mills' enthusiastic support for the proposed Associate of Applied Science (AAS) in Food and Feed Manufacturing program being proposed by the Department of Grain Science at Kansas State University. As a leading flour milling company with a long-standing commitment to the state of Kansas, we recognize the significant benefits that this program will bring to both the local workforce and the industry as a whole.

Kansas has a storied history in flour milling and agriculture, and it is imperative that we continue to nurture and develop this vital sector. The AAS in Food and Feed Manufacturing aligns perfectly with the needs of our industry and the opportunities available to Kansas students. This program will serve as a critical bridge between education and industry, addressing the growing demand for skilled professionals in the food and feed manufacturing sector.

The benefits of this program are manifold:

1. **Enhancing Workforce Skills:** The AAS program will provide current and future employees with specialized training that is directly applicable to their roles within the industry. By equipping them with advanced knowledge and practical skills, the program ensures that our workforce remains competitive and adept in a rapidly evolving field.

2. **Fulfilling Industry Needs:** As the food and feed manufacturing sector continues to grow, there is an increasing need for trained professionals who understand both the technical and operational aspects of the industry. This program will help fill that need by developing a pool of highly qualified candidates ready to contribute effectively from day one.

3. **Supporting Local Economies:** By fostering a skilled workforce, the AAS program will support the long-term viability of Kansas flour mills and other food and feed manufacturing businesses. This not only helps our company but also strengthens the overall economic health of the state.

4. **Creating Pathways for Students:** The program offers a valuable opportunity for Kansas students to gain relevant education and hands-on experience, which can lead to rewarding careers within the state. By providing a clear pathway from education to employment, the

program will help retain talent within Kansas and ensure a steady pipeline of skilled workers for the future.

At Ardent Mills, we are committed to supporting educational initiatives that align with our industry's needs and contribute to the growth of the local economy. We believe that the AAS in Food and Feed Manufacturing is a significant step forward in achieving these goals and are proud to lend our support to this initiative.

Thank you for considering this valuable addition to the educational landscape of Kansas. We are confident that the program will make a lasting impact and look forward to witnessing its success.

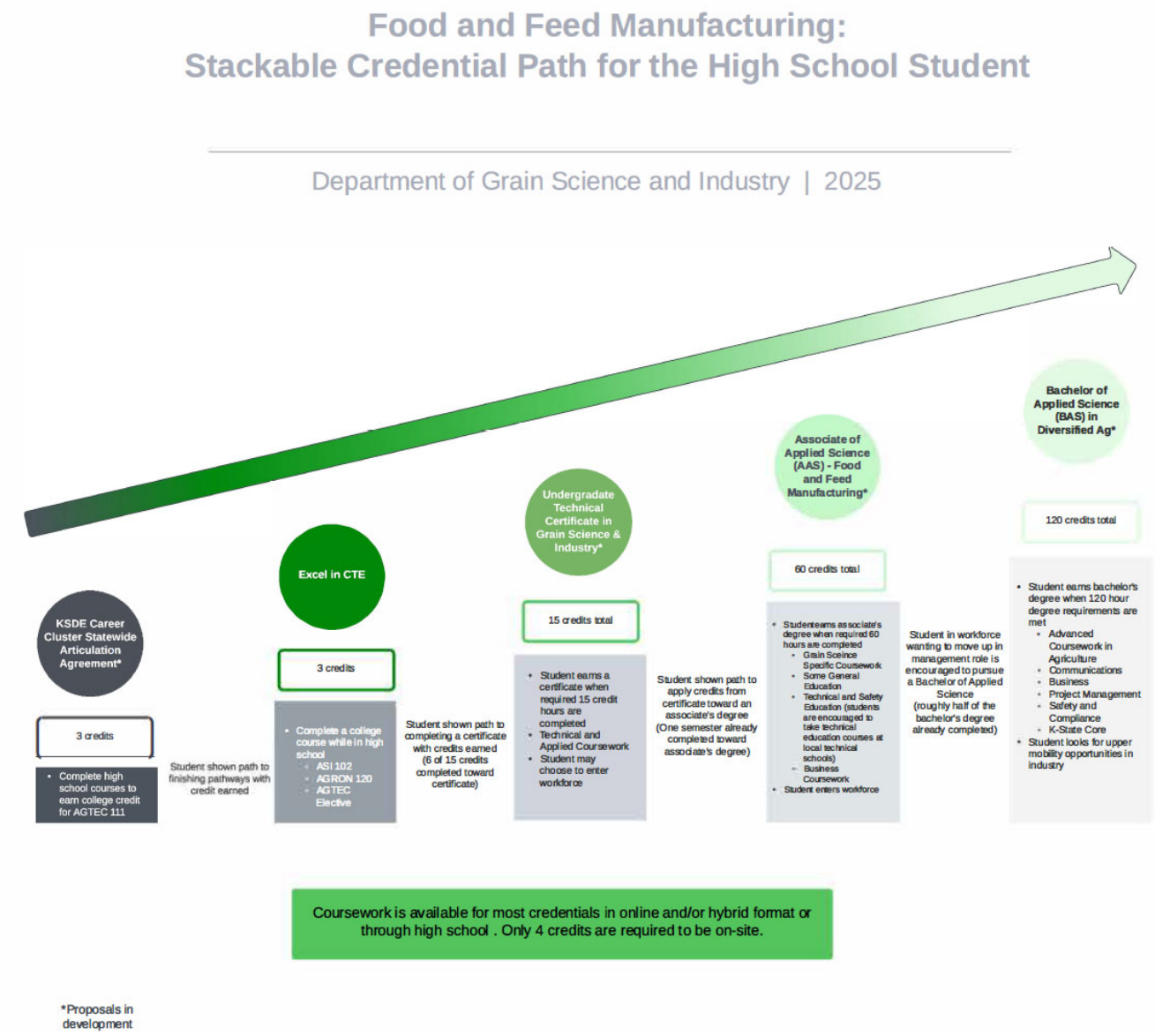
Sincerely,

Troy Anderson
Vice President | *Operations*
Cell: 316-200-2041

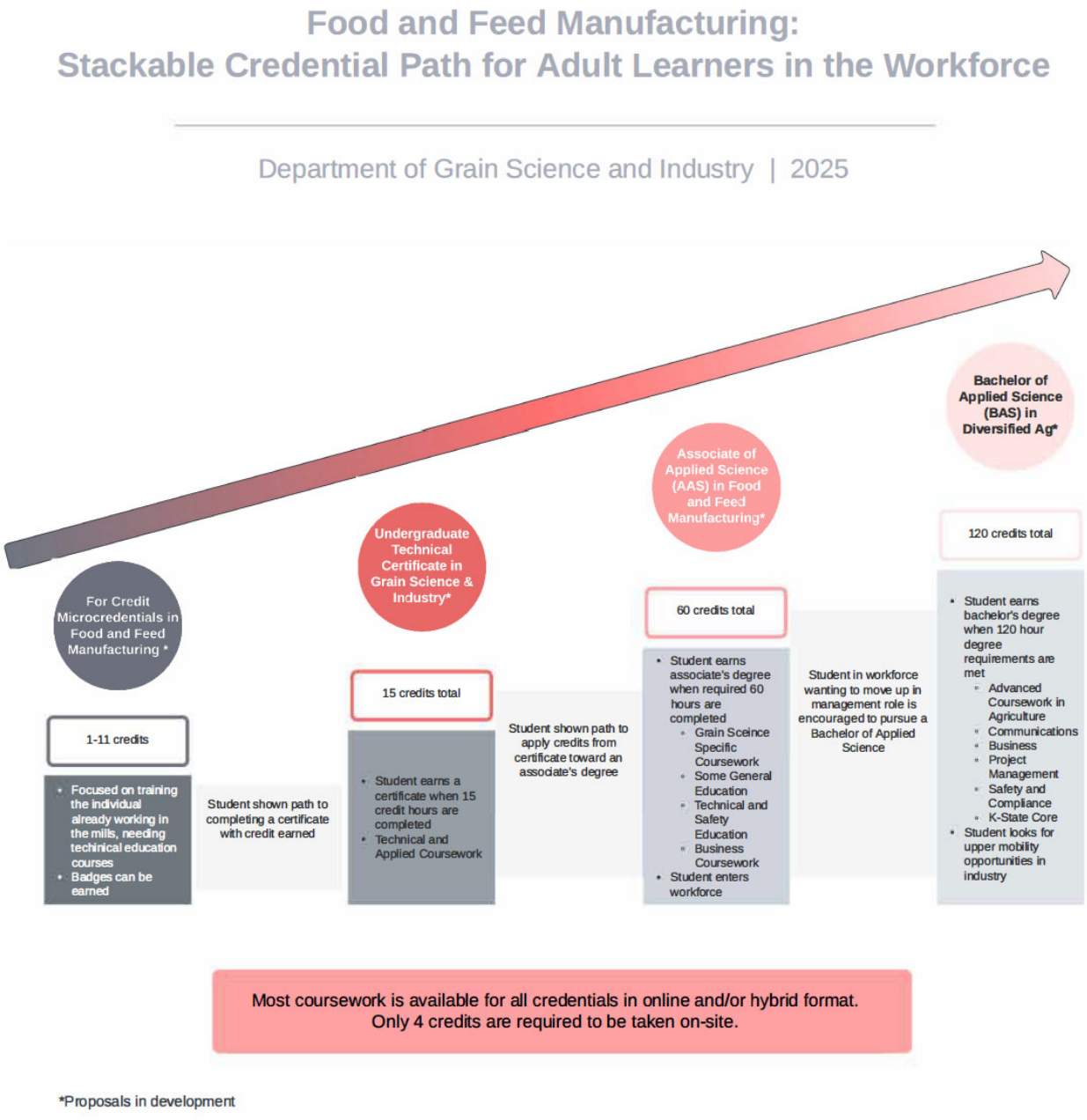
ardentmills.com

Nourishing what's next

Appendix II:


Food and Feed Manufacturing:
Stackable Credential Path for the High School Student
Department of Grain Science and Industry | 2025
KSDE Career Cluster Statewide Articulation Agreement*
3 credits
Complete high school courses to earn college credit for AGTEC 111
Student shown path to finishing pathways with credit earned
Excel in CTE
3 credits
Complete a college course while in high school
ASI 102
AGRON 120
AGTEC Elective
Student shown path to completing a certificate with credits earned (6 of 15 credits completed toward certificate)
Undergradate Technical Certificate in Grain Science & Industry*
15 credits total
Student earns a certificate when required 15 credit hours are completed
Technical and Applied Coursework
Student may choose to enter workforce
Student shown path to apply credits from certificate toward an associate's degree (One semester already completed toward associate's degree)
Associate of Applied Science (AAS) - Food and Feed Manufacturing*
60 credits total
Student earns associate's degree when required 60 hours are completed
Grain Science Specific Coursework
Some General Education
Technical and Safety Education (students are encouraged to take technical education courses at local technical schools)
Business Coursework
Student enters workforce
Student in workforce wanting to move up in management role is encouraged to pursue a Bachelor of Applied Science (roughly half of the bachelor's degree already completed)
Bachelor of Applied Science (BAS) in Diversified Ag*
120 credits total
Student earns bachelor's degree when 120 hour degree requirements are met
Advanced Coursework in Agriculture
Communications
Business
Project Management
Safety and Compliance
K-State Core
Student looks for upper mobility opportunities in industry
Coursework is available for most credentials in online and/or hybrid format or through high school . Only 4 credits are required to be on-site.
*Proposals in development

Appendix III:



KANSAS STATE UNIVERSITY

Complete as of 9/16/2024

Degree: Associate of Applied Science
Major: Food and Feed Manufacturing

Distinctive Requirements for Degree Program
To Declare Major:

To Prepare for First Semester:

First Year					
SEMESTER 1		**Critical**	**Recommended**	**Kansas State Core**	**CREDITS**
Requirement #1 English	Select 1 course from the list (i.e. ENGL 100 - Expository Writing I)			010	3
Requirement #3 Mathematics & Statistics	Select 1 course from the list (i.e. STAT 225 - Intro to Statistics)			030	3
ASMS 120	Intro to Food & Feed Manufacturing Employee Safety				1
ASMS 220	Employee Safety in Grain Handling Facilities				1
ASMS 221*	Safety Applications				1
FFM 100	Orientation to Food & Feed Manufacturing				1
FFM 110	Intro to Grain & Food Manufacturing Industries				1
FFM 111	Intro to Feed & Pet Food Manufacturing Industries				1
FFM 120	Ingredient ID & Quality: Cereal Grains				1
FFM 121	Ingredient ID & Quality: Oil Seeds & Legumes				1
FFM 122	Ingredient ID & Quality: Co-products & Additives				1
Select 1 course:					
FFM 159*/169*/179*	Practicum: Intro to Milling/Intro to Baking/Intro to Feed & Pet Food				1
	Total Credits				**16**
SEMESTER 2		**Critical**	**Recommended**	**Kansas State Core**	**CREDITS**
Requirement #2 Communication	Select 1 course from the list (i.e. COMM 106 - Public Speaking I)			020	3
Requirement #5 Social & Behavioral Science or #6 Arts & Humanities	Select 1 course from the list			050 or 060	3
Computer Applications Course	Select 1 course: ASI 290 or CIS				1-3
Select 1 group:					3
FFM 150/151/152	Milling: Preparing Grains/Milling Process/Milling Specialty Grains				
FFM 160/161/162	Baking: Bakery Ingredients/Bakery Processes/Bakery Products				
FFM 170/171/172	Feed & Pet Food: Feed Processing/Pet Food Processing/Finished Feed & Pet Food Quality Assurance				
Specialization Elective Course	See Departmental List				3
	Total Credits				**13-15**
Second Year					
SEMESTER 1		**Critical**	**Recommended**	**Kansas State Core**	**CREDITS**
Requirement #4 Natural & Physical Sciences	Select 1 course from the list (i.e. AGRON 120 & 121, Crop Science)			040	4
LEAD 212 or MANGT 220	Introduction to Leadership Concepts or Principles of Management				3
FFM 210	Food & Feed Manufacturing Equipment Maintenance				1
Select 1 course:					
FFM 215/216/217	Preventative & Predictive Maintenance: Milling Specific/Baking Specific/Feed & Pet Food Specific				1
Select 1 course:					
FFM 225*/226*/227*	Equipment Maintenance Practicum: Milling/Baking/Feed & Pet Food				1
Specialization Elective Course	See Departmental List				3
Management Elective Course	See Departmental List				3
					16
SEMESTER 2		**Critical**	**Recommended**	**Kansas State Core**	
FFM 250	Advanced Food & Feed Manufacturing Management				1
Select 1 course:					
FFM 251*/261*/271*	Advanced Management : Milling/Baking/Feed & Pet Food				1
Select 1 course:					
FFM 252/262/272	Advanced Manufacturing Management Practicum: Milling/Baking/Feed & Pet Food				1
FFM 280	Intro to Food & Feed Safety				1
Select 1 course:					
FFM 285/287	Food Safety Principles in Milling and Baking/Advanced Feed & Pet Food Safety				1
Specialization Elective Course	See Departmental List				3
Management Elective Course	See Departmental List				3
Management Elective Course	See Departmental List				3
Free Elective	If needed to reach 60 total hours				0-2
	Total Credits				**14-16**
	Program Total Credits:				**60**

*On-Site Course