# Undergraduate Student Handbook 2023 - 2024

TEXAS A&M UNIVERSITY

# Food Science

Department of Food Science and Technology
Texas A&M University
373 Olsen Blvd.
134 Cater-Mattil Hall
College Station, TX 77843-2256

General Inquiries: (979) 845-1735 | foodscience@ag.tamu.edu

**https://foodscience.tamu.edu**

This handbook provides information about course requirements, scheduling, and recommendations for two degree options in food science. For up-to-date information on additional courses, admission, B.S. degree requirements, scholastic deficiency, financial aid and other topics not addressed in full detail in this handbook, refer to the Texas A&M University Undergraduate Catalog and Texas A&M University Rules and Regulations. Students are expected to comply with all policies and procedures set forth by Texas A&M University, and all affiliating institutions. Access to the Texas A&M University Undergraduate Catalog may be obtained at:

**https://catalog.tamu.edu**

***This link will lead you to the main Texas A&M University Catalog page.***

***Your catalog is the 2023-2024 Undergraduate Catalog.***

## FOOD SCIENCE & TECHNOLOGY

Welcome to Food Science and Technology! You are entering an exciting field that allows you to build a strong background for many career opportunities such as food safety and microbiology, quality assurance, processing and operating management, technical service, research and development, sales and public relations.

For advising in Food Science and Technology, contact:

***Dr. Poppy Capehart '75***
**Academic Advisor IV**
**KLEBERG (KLCT) 114**
**E-mail: poppy.capehart@ag.tamu.edu**

***Evelyn Quinones***
**Academic Advisor IV**
**KLBERG (KLCT) 109**
**E-mail: evelyn.quinones@ag.tamu.edu**

***Fax Number: 979-458-3129***

## SUBSCRIPTION TO FOOD SCIENCE LISTSERV

This email distribution list is used by advisors to communicate job opportunities, scholarships, internships, and other relevant information.

You can join the list by sending an e-mail to listserv@listserv.tamu.edu and in the BODY put SUBSCRIBE food-science firstname lastname

**Example: SUBSCRIBE food-science Rock T Aggie**

You can remove your name from the list by sending an e-mail to listserv@listserv.tamu.edu and in the BODY put UNSUB food-science

## ADVISING INFORMATION

### Catalog Requirements

You are responsible for following the degree plan from the catalog in effect when you entered Texas A&M. For example, if you begin in the Department of Food Science as a freshman or transfer student in Fall of 2017 you will follow the Fall 2017 catalog for the duration of your time at Texas A&M. In order to prevent taking courses which do not meet current requirements, students should check with their advisors before selecting electives, including courses to meet requirements of the Core Curriculum.

### Registration

Advising help sessions are scheduled by appointment the month before pre-registration begins. This is a good opportunity to visit with an advisor to discuss your schedule. If you are a continuing student in good standing, you are expected to pre-register**. If you are on scholastic probation you will be blocked from registration until you meet with an advisor.** Please call 845-2142 for more information. Registration is completed by going to howdy.tamu.edu and following the instructions.

### Add/Drop, Withdrawal

The schedule for adding and dropping is listed online at howdy.tamu.edu. The policy for add/drop and withdrawal is in the current Undergraduate Catalog. The withdrawal process is done in the Dean's Office of the College of Agriculture and Life Sciences in AGLS 515.

### Scholastic Deficiency

You are responsible for knowing and abiding by probation and block procedures and requirements:

- Should your GPR drop below 2.000 you will be notified of:
  - placement on scholastic probation, and placement of block from registration – must meet with major advisor to have block removed.
- A probation agreement will be signed with an advisor that describes the terms of your probation.
- Failure to meet this agreement will result in being blocked from registration and notification of procedures for withdrawal from Texas A&M University.

TEXAS A&M UNIVERSITY
Food Science

## Scholastic Probation Agreement

Year: _____ □ Spring □ Summer □ Fall

Student Name: _____ UIN: _____

Major _____ Concentration: _____

Email Address: _____ Phone: _____

Students placed on scholastic probation (GPR below 2.0) in the Department of Nutrition and Food Science must agree to the following conditions and expectations outlined in this document.

I understand that while on scholastic probation, I:

- Have been granted two semesters to clear probation, and I must meet the conditions of my first probation agreement to be allowed to continue to the second semester.

  Current GPR: _____ Current Grade Point Deficiency: _____

  Must make up _____ points during the _____ semester.

- Must be a full time student and take courses recommended by my advisor.

| | |
|---|---|
| | |
| | |
| | |

- Must complete Success Program through the Academic Success Center by the end of the semester of probation. Certification will need to be presented to an academic advisor. Date of *mandatory* Success Program meeting: _____
- Must commit to attend every class as scheduled. If I am absent for school activities and/or personal issues, I am to meet with my course instructors to make up any missed work.
- Will change the habits that prevented me from being unsuccessful last semester (ie. work hours, social activities, attendance, study skills, etc.).
- Will contact a NFSC Advisor immediately if extenuating circumstances arise which may affect my final grades, course registration, or enrollment status.
- Understand that while on probation, my future course registrations will be blocked until I meet with a NFSC Advisor to review my progress and update the Scholastic Probation Agreement.

I understand that failure to meet the terms of this agreement will result in dismissal. The Department of Nutrition and Food Science does not readmit students once dismissed or those who transfer to another program while on probation. I agree to these terms of probation.

_____ _____
Student Signature Date

_____ _____
Advisor Signature Date

_____ _____
Department Head or Academic Designate Date

# NOTES:

# 1. Student Registration

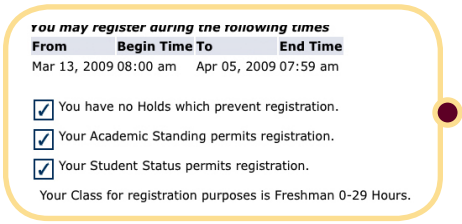
## 1.5 Curriculum Violation: Degree-Seeking Graduate and Undergraduate Students

**1.5.1** A student is expected to register for a schedule of courses that follows the program of study for a degree in his or her college. A student who elects not to follow the program of study must obtain approval from his or her academic advisor, department head or college Dean or designee, and the Dean or designee of the college offering the courses. A student who fails to obtain approval may be, by his or her Dean or designee, blocked from registration, removed from the inappropriate course(s) and/or required to register for a prescribed schedule of courses.

# NOTES:

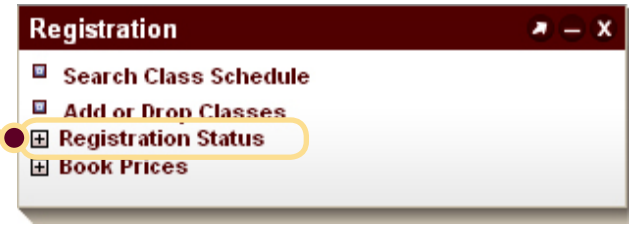
# How to Register (Add/Drop) Classes

1. On the **My Record** tab, click the **Registration Status** link in the **Registration** channel.
2. Highlight your term and campus and click **Submit**.
3. Confirm that all boxes are checked to proceed with registration.




4. Scroll to the bottom of the screen and click **Add or Drop Classes**. If the top box is unchecked, click **View Holds** inside the yellow box. If any of the other two boxes are unchecked, call the **Registration Help Desk**.
5. Read the **Terms of Use** and click **I Agree**.

   ***Note***: *You must do this once for every term that you register.*
6. Choose one of two options:
   - If you know the Course Reference Numbers (CRNs) of the classes you wish to take, enter them into the **Add Classes Worksheet** and then click Submit Changes. The classes will be added to your schedule unless they are full or you are not allowed to take them.
   - If you do not know the CRNs of the classes you want, click New Search.




***Note***: *These links can be used out of the sequence listed in order to add or drop classes.*



***Warning***: *If you click* ***Add to Worksheet, the class is NOT added to your schedule, but is added to a temporary worksheet****. Once you are finished adding to the worksheet, you can add the classes to your schedule; however, the worksheet will not be saved once you log out. Please write down the CRNs before logging out.*

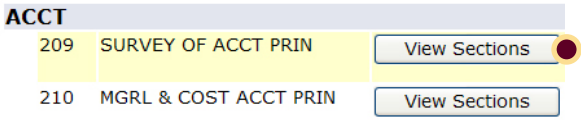
# How to Register (Add/Drop) Classes Continued

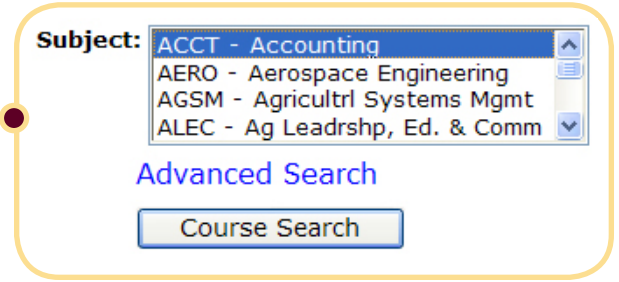
7. To conduct a search choose one of the options below:

### *A. Conducting A Basic Search*

To conduct a basic search, choose the subject of the class for which you are looking and click **Course Search**.

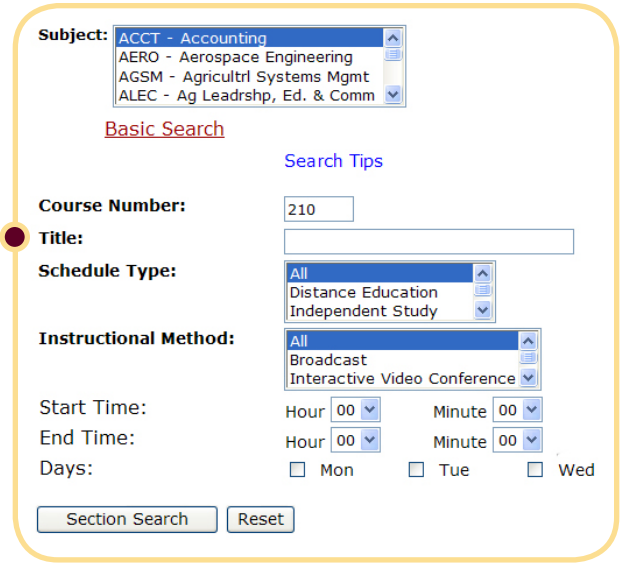
***Note**: This will display all the courses for the selected **Subject**. From here you can view all the sections for a specific course by clicking **View Sections**.*




### *B. Conducting An Advanced Search*

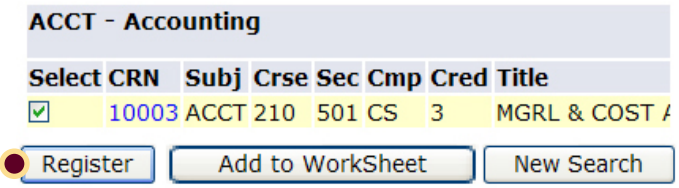
To narrow the search results further, click on **Advanced Search** and enter more information into the search fields. Then, click **Section Search**.

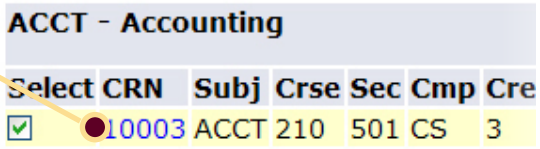


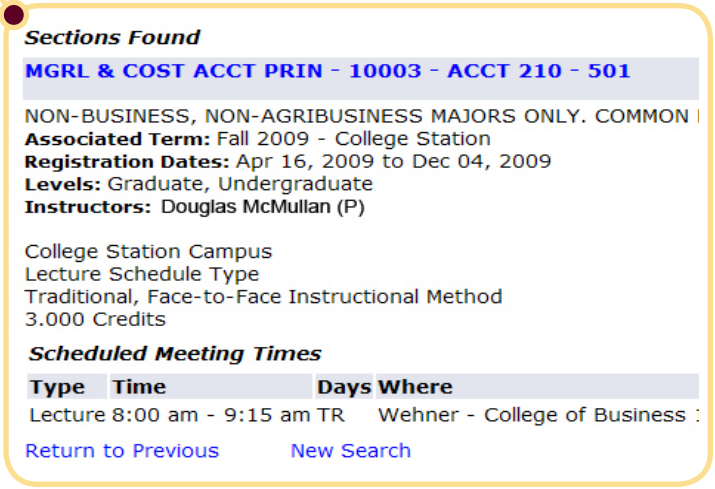

***QUICK TIP**: **You must always choose a subject before you can search**. You can quickly find an item in a scroll box by typing the name of the subject for which you are searching. For example, if you want to find a marketing course, start typing "MKTG" while you have a word selected inside the subject box. It will quickly take you to that subject so you do not have to scroll through all of the other subjects. This works in all of the scroll boxes. For more tips, click **Search Tips** found under **Advanced Search**.*

# How to Register (Add/Drop) Classes Continued

8. Once you find the class, click the blue **Course Reference Number (CRN)** to find out more information.
9. Click on the course title to see registration restrictions for the class. Click **Return to Previous** to get back to the list of classes, or click **New Search** to start a new search from scratch.
10. Check the ☐ box to the left of the class you want to add. Then, click Register. The class will be added to your schedule unless it is full or you are restricted from taking it.




## Common Registration Errors

- ***Class Limit Restriction*** – The Course is Full.
- ***Major Restriction*** - You have to be a particular major to take the course.
- ***Department Restriction*** – You have to be in a particular department to take the course.
- ***TSI Status Restriction*** – You have to meet specific testing requirements to take the course.
- ***Time conflict with CRN ###*** – The course overlaps with another course on your schedule.

## Help

If you have questions during the registration process, please contact the **Registration Help Desk**, Monday through Friday, 8 a.m. to 5 p.m. at **979.845.7117**.

# Howdy

# Undergraduate Degree Planner
## Student Guide

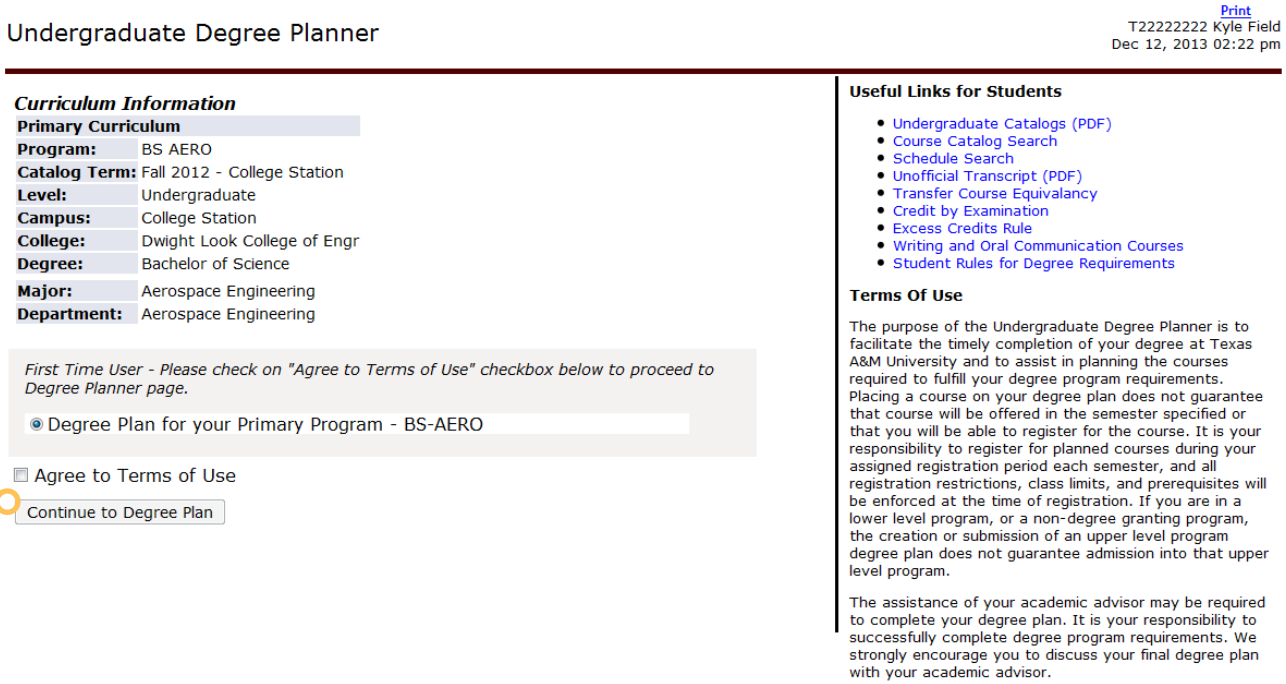
## What is the Degree Planner?

The Undergraduate Degree Planner is a course planning tool designed to facilitate the timely completion of your degree at Texas A&M University and to assist in planning the courses required to fulfill your degree program requirements. To start using the Degree Planner, log into Howdy, click on the **My Record** tab, and find the **Undergraduate Degree Planner** channel on the right column.

## Accessing the Undergraduate Degree Planner:

1. Click on the **Undergraduate Degree Planner** link to view your **Curriculum Information** screen.


2. The first time you use the Degree Planner you will need to agree to the terms of use. Click the **Continue to Degree Program** button to run a degree evaluation and add planned courses to your degree plan. Students in two-degree programs must choose which program to use for their degree evaluation. Students in entry-level programs which require admission to an upper-level or declaration of an option must choose their desired degree program from a list. The following Entry-Level Program example outlines this process.

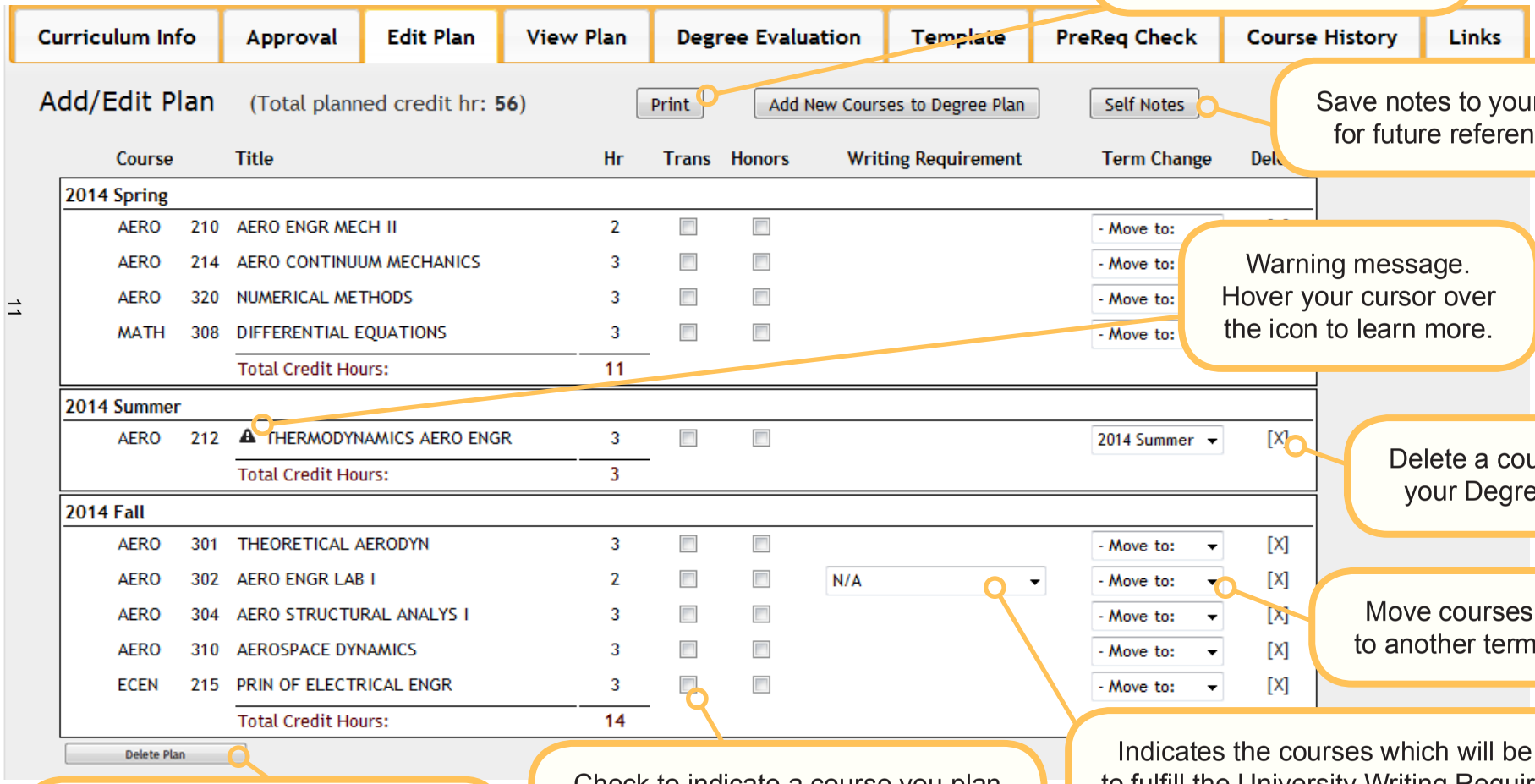


# Howdy

# Undergraduate Degree Planner
## Student Guide

## Edit Plan Tab:

Below is how the **Edit Plan** tab will look after you some courses are added.




Open a PDF of your planned courses to print.

Save notes to yourself for future reference

Warning message. Hover your cursor over the icon to learn more.

Delete a course from your Degree Plan.

Move courses to another term.

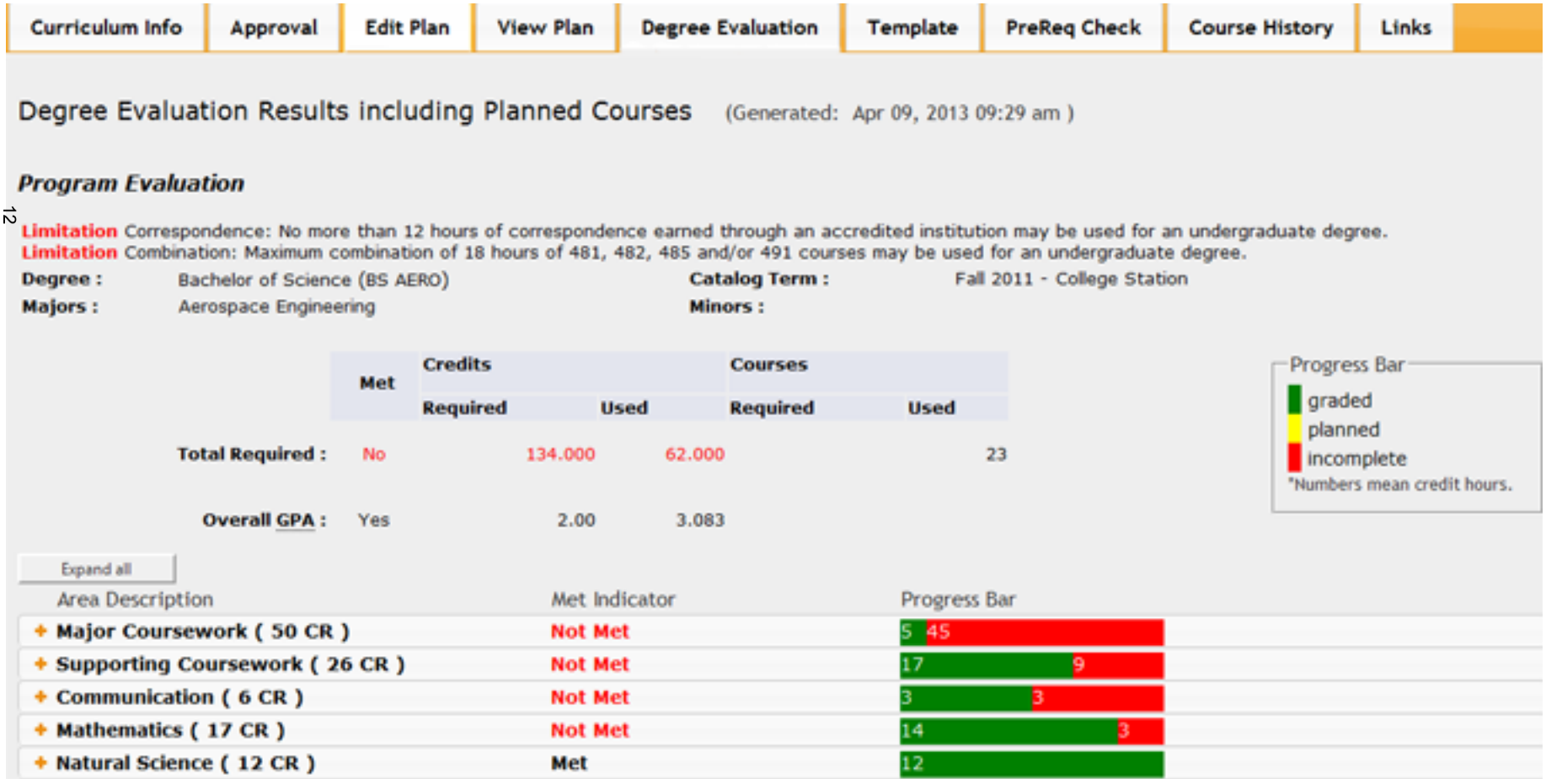
Indicates the courses which will be used to fulfill the University Writing Requirement.

Check to indicate a course you plan to complete at another institution.

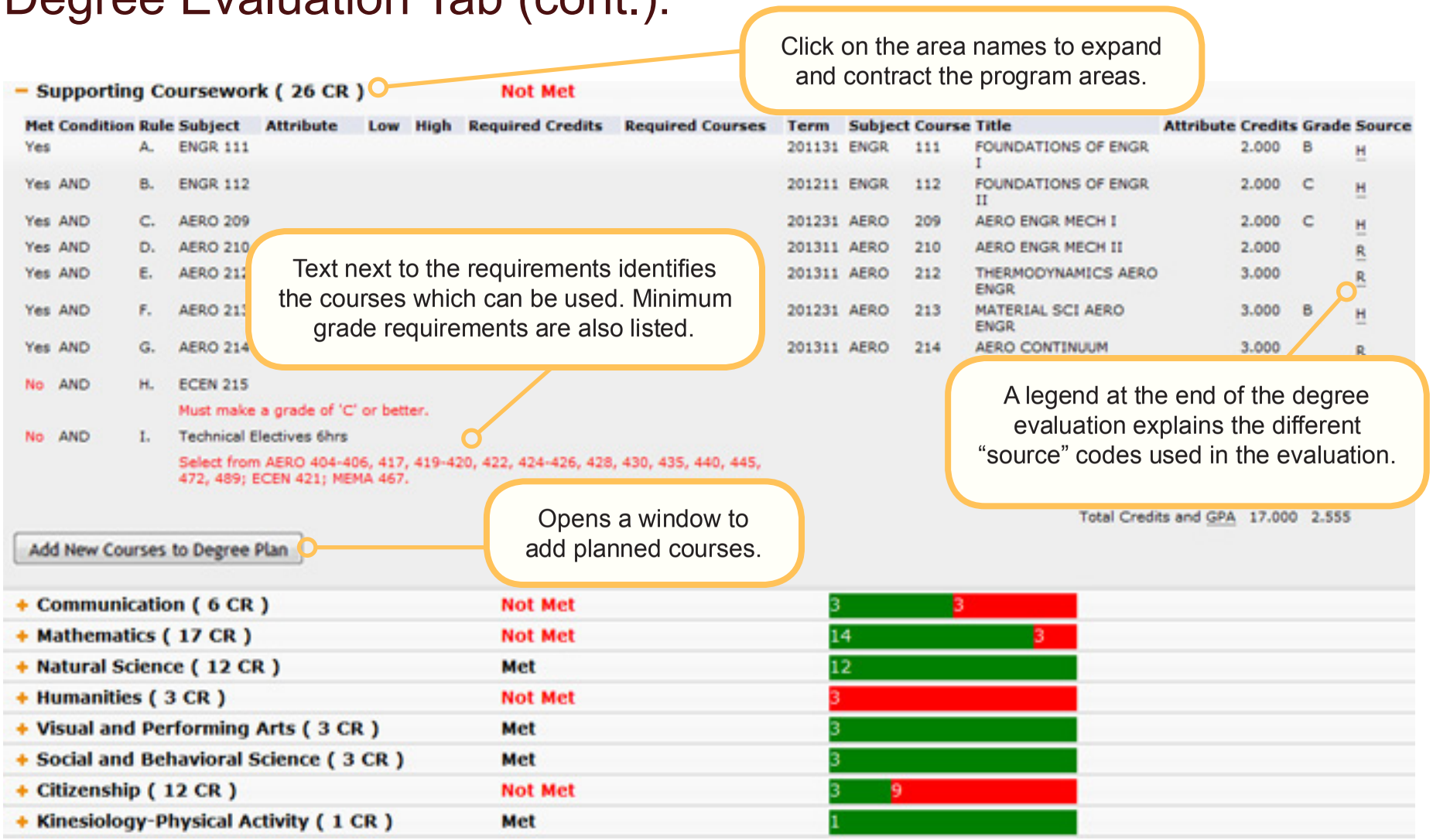
Delete all your planned courses.

# Degree Evaluation Tab:

The **Degree Evaluation** tab is a tool provided to help you plan the courses which will be completed for your degree. Click on the section headers to expand each area. When an area has incomplete requirements, "Not Met" appears next to the area description. The **Progress Bars** will help you quickly determine which areas require your attention. You should review each area to determine which requirements are still lacking and to choose the courses for your degree plan. Refer to the next page to learn about the information provided within the **Degree Evaluation** tab.



# Degree Evaluation Tab (cont.):



# NOTES:

## REQUIREMENTS FOR A B.S. DEGREE IN FOOD SCIENCE & TECHNOLOGY

A minimum of 120 semester hours must be completed. All courses on your individual degree plan must be completed. A minimum of 36 semester hours of 300 and/or 400 level coursework must be successfully completed in residence at Texas A&M University to obtain a baccalaureate degree. A minimum of 12 of those 36 hours must be in the major. See the current Undergraduate Catalog for more information.

Food Science and Technology is an exciting multidisciplinary field that prepares majors with a comprehensive knowledge of the biological, physical and engineering sciences to develop new food products, design innovative processing technologies, improve food quality and nutritive value, enhance the safety of foods and ensure the wholesomeness of our food supply. Food Science majors apply the principles learned in the basic sciences such as food chemistry, biochemistry, genetics, microbiology, food engineering and nutrition to provide consumers with safe, wholesome and attractive food products that contribute to their health and well-being.

The undergraduate curriculum is approved by the Institute of Food Technologists (IFT) and offers two tracks, a Food Science Option and an Industry Option. These tracks provide promising career opportunities in areas such as food product/ process design, technical service, research and development, quality assurance, food safety, food law, regulatory oversight, technological innovation, marketing, corporate sales, sensory evaluation, and operations management. There are numerous opportunities available for corporate internships, scholarships and study abroad programs that provide real-world experience and enhance opportunities for employment after completing a baccalaureate degree. The major also provides an excellent background for those interested in professional schools, graduate studies, medicine, veterinary medicine, dentistry, pharmacy, physical therapy, nursing, occupational therapy and public health.

### Food Science Option

The Food Science option provides a strong knowledge base and fundamental understanding of chemistry, biology, engineering, physics, statistics, genetics, biochemistry, microbiology, and nutrition that is applied toward the preservation, processing, packaging and distribution on foods that are wholesome, affordable and safe. The goal of the curriculum is to prepare Food Scientists for career opportunities in the food and allied industries or for further studies in graduate or professional schools. See an academic advisor for specific course listings.

### Food Industry Option

The Food Industry option integrates knowledge from the basic disciplines of chemistry, microbiology, physics and biology and applies scientific principles from food engineering, food processing operations, sensory evaluation, food safety, HACCP, quality assurance and management to produce foods that are wholesome, affordable and safe. The goal of the curriculum is the prepare Food Technologists for careers in the food and related industries. These careers may involve food processing, manufacturing, technical service, food product development, operations management, regulatory oversight and other technology based opportunities.

## CURRICULUM IN FOOD SCIENCE AND TECHNOLOGY
## *OPTION: SCIENCE*
## CATALOG NO. 146 (2023-2024)[1]

### FRESHMAN YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| ENGL 103 or 104 | 3 | American History Elective[2] | 3 |
| MATH 140 | 3 | MATH 142 | 3 |
| CHEM 119 | 4 | CHEM 120 | 4 |
| FSTC 201 | 3 | BIOL 111 | 4 |
| FSTC 210 | 2 | Free Elective | 1 |
| | 15 | | 15 |

### SOPHOMORE YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| NUTR 202 | 3 | CHEM 228/238 | 4 |
| CHEM 227/237 | 4 | American History Elective[2] | 3 |
| POLS 206 | 3 | ACCT 209[3] | 3 |
| Lang., Phil. & Culture Elective | 3 | Creative Arts Elective[2] | 3 |
| Economics Elective | 3 | PHYS 201 | 4 |
| | 16 | | 17 |

### JUNIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 311 | 3 | FSTC 312/313 | 4 |
| ENGL 210 | 3 | FSTC Elective[4] | 3 |
| POLS 207 | 3 | STAT 301, 302, or 303 | 3 |
| CHEM 315/318 | 4 | MGMT 309 | 3 |
| Free Elective | 3 | | 13 |
| | 16 | | |

### SENIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 326/327 | 4 | FSTC 315 or AGSM 315 | 3 |
| FSTC 314 | 3 | FSTC 401 | 3 |
| FSTC Elective[4] | 3 | BICH 303 or 410 | 3 |
| Free Elective | 3 | Free Elective | 1 |
| | 13 | FSTC 444 | 3 |
| | | FSTC 481 | 1 |
| | | | 14 |

A total of 120 hours is required for graduation; 36 hours of 300/400 level courses are required to meet the TAMU residency requirement.

1. Catalog should correspond with your first semester.
2. University Core Curriculum. Six hours of international and cultural diversity are required. Selection must be from courses on the approved list. Selection can be courses that also satisfy the requirement for social and behavioral sciences, visual and performing arts, humanities, or electives.
3. Students may take ACCT 229 Principles of Accounting.
4. Students may choose from ANSC 307, 457; FSTC 300, 305, 307, 324, 406, 407, 410, 420, 422, 457, 485, 489, 491; HORT 419, 420, 421; NUTR 211, 320; POSC 406.
5. Students may choose from AGEC 105, ECON 202 or 203.
6. Students may earn a chemistry minor by taking 6 hours of additional chemistry courses from an approved list as free electives. See the Department of Chemistry for more details. Students seeking a minor in chemistry must complete the Declaration of Minor in Chemistry form and have it approved by the undergraduate advisor in Chemistry (Room 104 Chemistry) and their NFSC advisor.

**CURRICULUM IN FOOD SCIENCE AND TECHNOLOGY**
***FOOD SCIENCE OPTION***
**CATALOG NO. 146 (2023-2024)***

**University Core Curriculum**

*Citizenship*
_____ History Elective (3) ***(TCCN: HIST 1301)***
_____ History Elective (3) ***(TCCN: HIST 1302)***
_____ POLS 206 (3) ***(TCCN: GOVT 2305/2302)***
_____ POLS 207 (3) ***(TCCN: GOVT 2306/2301***)

*Communication*
_____ ENGL 103 or 104 (3) ***(TCCN: 1301)***
_____ ENGL 210 (3) ***(TCCN: 2311)***

*Natural Sciences*
_____ CHEM 101/111 (4) ***(TCCN: 1411***)
_____ CHEM 102/112 (4) ***(TCCN: 1412)***

*Language, Philosophy and Culture*
_____ Language, Philosophy, and Culture Elective (3)

*Mathematics* and Statistics*
_____ MATH 141 (3) ***(TCCN: 1324)***
_____ MATH 142 (3) ***(TCCN: 1325)***
_____ STAT 302 (3)

*Social and Behavioral Sciences*
_____ AGEC 105 or ECON 202 or 203 (3)

*Creative Arts*
_____ Creative Arts Elective (3)

*International & Cultural Diversity*
_____ 3 hours *(can be used to satisfy*
_____ 3 hours *other requirements)*

*Writing Intensive Credits (must be FSTC)*

(1) FSTC 481
(2) FSTC 313

**Science Courses (Credit hours)**

*Physics*
_____ PHYS 201 (4) ***(TCCN: PHYS 1401)***

*Biochemistry*
_____ BICH 303 or 410 (3)

*Biology*
_____ BIOL 111 (4) ***(TCCN: 1406)***

*Nutrition*
_____ NUTR 202 (3) ***(TCCN: BIOL 1322)***

*Chemistry*
_____ CHEM 227 (3) ***(TCCN: 2423)***
_____ CHEM 237 (1) ***(TCCN: 2423)***
_____ CHEM 228 (3) ***(TCCN: 2425)***
_____ CHEM 238 (3) ***(TCCN: 2425)***
_____ CHEM 315 (3)
_____ CHEM 318 (1)

**Required Food Science Courses**
_____ FSTC 201 (3)
_____ FSTC 210 (2)
_____ FSTC 311 (3)
_____ FSTC 312/313 "W" (4)
_____ FSTC 314 (3)
_____ FSTC 315 (3)
_____ FSTC 326/327 (4)
_____ FSTC 401 (3)
_____ FSTC 481 "C" (1)
_____ FSTC 444 (3)
_____ FSTC Electives (3)***
_____ FSTC Electives (3)***

**Business Requirement**
_____ ACCT 209 or 229 (3)
_____ MGMT 309 (3)

**Free Electives (9 total)******
_____ Free Electives
_____ Free Electives
_____ Free Electives

*** - Prerequisites for MATH 142: Undergraduate level MATH 140 Minimum Grade of C or Undergraduate level MATH 150 Minimum Grade of C or TAMU MPE for Math 142 13 or TAMU Math Placement Total 22 or TAMU MPE for Math 142 Ver. 2 18**

## CURRICULUM IN FOOD SCIENCE AND TECHNOLOGY
## *OPTION: INDUSTRY*
## CATALOG NO. 146 (2023-2024)[1]

### FRESHMAN YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| ENGL 103 or 104 | 3 | American History Elective[2] | 3 |
| MATH 140 | 3 | MATH 142 | 3 |
| CHEM 119 | 4 | CHEM 120 | 4 |
| FSTC 201 | 3 | Economics Elective[5] | 3 |
| FSTC 210 | 2 | Lang., Phil. & Culture Elective[2] | 3 |
| | 15 | | 16 |

### SOPHOMORE YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| BIOL 111 | 4 | ACCT 209 | 3 |
| CHEM 227/237 | 4 | American History Elective[2] | 3 |
| POLS 206 | 3 | Creative Arts Elective[2] | 3 |
| NUTR 202 | 3 | PHYS 201 | 4 |
| | 14 | Free Elective | 3 |
| | | | 16 |

### JUNIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 311 | 3 | AGEC 314 | 3 |
| ENGL 210 | 3 | FSTC 312/313 | 4 |
| POLS 207 | 3 | STAT 302 | 3 |
| Free Elective | 3 | MGMT 309 | 3 |
| FSTC Elective[3] | 3 | Free Elective | 1 |
| | 15 | | 14 |

### SENIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 326/327 | 4 | FSTC 481 Seminar | 1 |
| FSTC 314 | 3 | FSTC 401 | 3 |
| FSTC 315 or AGSM 315 | 3 | BICH 303 or 410 | 3 |
| FSTC Elective[3] | 3 | FSTC 444 | 3 |
| Free Elective | 1 | Free Elective | 6 |
| | 14 | | 16 |

A total of 120 hours is required for graduation; 36 hours of 300/400 level courses are required to meet the TAMU residency requirement.

1. Catalog should correspond with your first semester.
2. University Core Curriculum. Six hours of international and cultural diversity are required. Selection must be from courses on the approved list. Selection can be courses that also satisfy the requirement for social and behavioral sciences, visual and performing arts, humanities, or electives.
3. Students may choose from ANSC 307, 457; FSTC 300, 305, 307, 324, 406, 407, 410, 420, 422, 457, 485, 489, 491; HORT 419, 420, 421; NUTR 211, 320; POSC 406.
4. Students may choose from AGEC 105, ECON 202 or 203.
5. Students may achieve a business minor by taking the following courses as free electives: ISYS 209, MGMT 209, FINC 409, MKTG 409.

**CURRICULUM IN FOOD SCIENCE AND TECHNOLOGY**
***INDUSTRY OPTION***
**CATALOG NO. 146 (2023-2024)**

**University Core Curriculum**

*Citizenship*
_____ History Elective (3) ***(TCCN: HIST 1301)***
_____ History Elective (3) ***(TCCN: HIST 1302)***
_____ POLS 206 (3) ***(TCCN: GOVT 2305/2302)***
_____ POLS 207 (3) ***(TCCN: GOVT 2306/2301)***

*Communication*
_____ ENGL 103 or 104 (3) (***TCCN: 1301)***
_____ ENGL 210 (3) ***(TCCN: 2311)***

*Natural Sciences*
_____ CHEM 119 (4) ***(TCCN: 1411)***
_____ CHEM 120 (4) ***(TCCN: 1412)***

*Languages, Philosophy, and Culture*
_____ Languages, Philosophy, and Culture Elective (3)

*Mathematics* and Statistics*
_____ Math 140 (3) ***(TCCN: 1324)***
_____ Math 142 (3) ***(TCCN: 1325)***
_____ STAT 302 (3)

*Social and Behavioral Sciences*
_____ AGEC 105 or ECON 202 or 203 (3)

*Creative Arts*
_____ Creative Arts Elective (3)

*International & Cultural Diversity*
_____ 3 hours *(can be used to satisfy*
_____ 3 hours *other requirements)*

*Writing Intensive Credits (must be FSTC)*

(1) _____ FSTC 481
(2) _____ FSTC 313

**Science Courses (Credit hours)**

*Physics*
_____ PHYS 201 (4) ***(TCCN: PHYS 1401)***

*Biochemistry*
_____ BICH 303 or 410 (3)

*Biology*
_____ BIOL 111 (4) ***(TCCN:1406)***

*Nutrition*
_____ NUTR 202 (3) ***(TCCN: BIOL 1322)***

*Chemistry*
_____ CHEM 227(3) ***(TCCN: 2423)***
_____ CHEM 237 (1) ***(TCCN: 2423)***

**Required Food Science Courses**

_____ FSTC 201 (3)
_____ FSTC 210 (2)
_____ FSTC 311 (3)
_____ FSTC 312/313 (4)
_____ FSTC 314 (3)
_____ FSTC 315 (3)
_____ FSTC 326/327 (4)
_____ FSTC 401 (3)
_____ FSTC 481 (1)
_____ FSTC 444 (3)
_____ FSTC Electives (3)
_____ FSTC Electives (3)

**Business Requirement**

_____ ACCT 209 (3)
_____ MGMT 309 (3)
_____ AGEC 314 (3)

**Free Electives (14 total)**

_____ Free Electives
_____ Free Electives
_____ Free Electives
_____ Free Electives

*** - Prerequisites for MATH 142: Undergraduate level MATH 140 Minimum Grade of C or Undergraduate level MATH 150 Minimum Grade of C or TAMU MPE for Math 142 13 or TAMU Math Placement Total 22 or TAMU MPE for Math 142 Ver. 2 18**

## FOOD SCIENCE COURSE DESCRIPTIONS

**FSTC 201 Food Science (Credit 3)**
The fundamental biological, chemical and physical scientific principles associated with the study of foods; topics include food composition and nutrition, food additives and regulations, food safety and toxicology, food processing, food engineering, food biotechnology, product development and sensory evaluation.

**FSTC 210 Horizons in Nutrition and Food Science (Credit 2)**
Introduction to nutrition and food science career opportunities through presentations by nutrition and food science researchers and industry professionals; addresses issues of professionalism including portfolio development, teamwork, and critical thinking skills. Cross-listed with NUTR 210.

**FSTC 300 Religious and Ethnic Foods (Credit 3)**
Understanding religious and ethnic foods with application to product development, production, and nutritional practices; emphasis on different food rules and priorities with attention given to different religious and ethnic groups within the US and around the world.
*Prerequisites*: Junior or senior classification or approval of instructor; basic knowledge of food science and nutrition helpful. Cross-listed with NUTR 300.

**FSTC 305 Fundamental Baking (Credit 3)**
Fundamentals of baking; chemical and physical properties of ingredients, methods of baking all products, fundamental reactions of dough, fermentation, and oven baking.
*Prerequisite*: CHEM 222 or 227 or approval of instructor.

**FSTC 307 Meats (Credit 3)**
Integrated studies of the meat animal processing sequence regarding the production of meat-type animals and the science and technology of their conversion to human food.
*Prerequisites*: ANSC 107 and 108 or approval of department head. Cross-listed with ANSC 307.

**FSTC 311 Principles of Food Processing (Credit 3)**
Principles and practices of canning, freezing, dehydration, pickling and specialty food manufacture; fundamental concepts of various techniques of preparation, processing, packaging, and use of additives; processing plants visited. ***(Only offered in the Fall semester)***
*Prerequisite*: FSTC 201; junior or senior classification or approval of department head or instructor.

**FSTC 312 Food Chemistry (Credit 3)**
The fundamental and relevant chemistry and functionality of the major food constituents (water, carbohydrates, lipids, proteins, phytochemical nutraceuticals) and study of food emulsion systems, acids, enzymes, gels, colors, flavors and toxins. (***Only offered in the Spring semester)***
*Prerequisite*: FSTC 201; CHEM 227; CHEM 237 or approval of department head or instructor.

**FSTC 313 Food Chemistry Laboratory (Credit 1), **Approved "W" Course**
Laboratory exercises investigating specific molecules, such as food acids, enzymes, pigments and flavors, and chemical interactions in foods, such as oxidation reactions, emulsion systems, and functional properties from a fundamental chemistry rather than an analytical perspective. ***(Only offered in the Spring semester)***
*Prerequisite*: FSTC 201; CHEM 227; CHEM 237 or approval of department head or instructor.

**FSTC 314 Food Analysis (Credit 3)**
Selected standard methods for assay of food components; principles and methodology of both classical and instrumental techniques in food analysis ***(Only offered in the Fall semester)***
*Prerequisite*: FSTC 201; FSTC 311; CHEM 227; CHEM 237 or approval of department head or instructor.

**FSTC 315 Food Processing Engineering Technologies (Credit 3)**
Elementary mechanics, power transmission, steam and steam boilers, pipes and pipe fitting, refrigeration and insulation, temperature measurement and control, electric motors, disposal of waste products, and mechanical problems as applied to foods and food processing.
*Prerequisite*: FSTC 201; PHYS 201; junior or senior classification or instructor approval. Cross-listed with AGSM 315.

**FSTC 326 Food Bacteriology (Credit 3)**
Microbiology of human foods and accessory substances. Raw and processed foods; physical, chemical and biological phases of spoilage. Standard industry techniques of inspection and control.
*Prerequisite*: BIOL 206 or approval of instructor; junior or senior classification. Cross-listed with DASC 326.

**FSTC 327 Food Bacteriology (Credit 1)**
Laboratory to accompany FSTC 326. Cross-listed with DASC 327.

**FSTC 330 Dairy and Food Technology (Credit 4)**
Principles and practices involved in processing of milk into market milk, butter, cheese and cheese foods; fundamental principles of these processes as related to their design and control. Cross-listed with DASC 330.

**FSTC 331 Dairy and Food Technology (Credit 4)**
Manufacture of frozen, freeze-dehydrated, concentrated and dehydrated dairy foods; fundamental aspects of freezing, concentration and dehydration of foods.
*Prerequisite*: FSTC 330 or approval of department head. Cross-listed with DASC 331.

**FSTC 401 Food Product Development (Credit 3)**
Design and develop food products using principles of food chemistry, food processing, nutrition, sensory analysis and statistics; team collaborates to improve food product characteristics to meet the needs of a changing society.
*Prerequisite*: FSTC 201, FSTC 311, FSTC 312, FSTC 313, FSTC 314, FSTC 315, FSTC 326 or registration therein; senior classification or approval of instructor.
***NOTE: TAKE THIS COURSE YOUR LAST SPRING SEMESTER.***

**FSTC 406** **Poultry Processing and Products (Credit 4) ***Approved "W" Course***
The science and practice of processing and products of poultry and eggs; physical, chemical, microbiological and functional characteristics of value-added poultry products as they affect consumer acceptance, efficiency of production, and regulatory approval.
*Prerequisite*: DASC 326/FSTC 326; CHEM 222; POSC 309; junior or senior classification or approval of instructor. Cross-listed with POSC 406.

**FSTC 410** **Nutritional Pharmacometrics of Food Compounds (Credit 3)**
Nutritional pharmacokinetics and pharmacodynamics of food compounds; specific examples of toxicological and pharmacological effects of food compounds.
*Prerequisites*: NUTR 202 or NUTR 203 or FSTC 201 or CHEM 222 or CHEM 227 or approval of instructor; junior or senior classification. Cross-listed with NUTR 410.

**FSTC 420** **Study Abroad: Italy (Credit 3)**
Explore principles of Mediterranean diet, European nutrition regulatory aspects, wine-making and food processing in Italy.

**FSTC 422** **Study Abroad: Brazil (Credit 3)**
Sustainable nutrition and food processing in Brazil.

**FSTC 440** **Therapeutic Microbiology: Probiotics and Related Strategies (Credit 3)**
Topics relevant to alimentary (gastrointestinal) microbiology including: (i) the "normal" intestinal microbiota; (ii) probiotic and prebiotic nutritional supplements; (iii) recombinant pharmabiotics; (iv) gut-associated lymphoid tissue and mucosal immunity; (v) foodborne gastrointestinal pathogens; and (vi) fermented products as functional foods.
*Prerequisties:* Undergraduate survey course in microbiology or approval of instructor; junior or senior classification. Cross-listed with NUTR 440.

**FSTC 444** **Fundamentals of Food Law (Credit 3)**
History, development of, and fundamental principles behind current food regulations, including food labeling, adulteration, food safety, food additives, dietary supplements, and import and export laws; overview of government agency jurisdiction, international law and ethics.
*Prerequisite*: FSTC 201; junior or senior classification.

**FSTC 446** **Commercial Fruit and Vegetable Processing (Credit 3)**
Pilot plant and laboratory operations pertaining to processed fruits, vegetables and beverages; new product development emphasized via individual laboratory projects.
*Prerequisite*: FSTC 311. Cross-listed with HORT 446. (Offered in even numbered years.)

**FSTC 457** **Hazard Analysis and Critical Control Point System (Credit 3)**
Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices and standard operating procedures development. (Only offered in the Fall semester)
*Prerequisite*: FSTC 326 or approval of instructor. Cross-listed with ANSC 457.

**FSTC 469 Experimental Nutrition and Food Science Laboratory (Credit 4)**
Investigation of nutritional intervention in animal models of metabolic and psychological disorders (e.g. obesity and depression); investigational approaches: behavioral analyses; RNA and protein analyses; reverse transcription PCR.
*Prerequisites:* CHEM 227; CHEM 237; junior or senior classification or approval of instructor. Cross-listed with NUTR 369.

**FSTC 471 Critical Evaluation of Nutrition and Food Science Literature (Credit 3)**
Evaluation of scientific literature, research methods within in the literature, and the quality of scientific studies to produce an evidence-based review in areas specific to nutrition and food science.
*Prerequisites*: NUTR 202 or 203 and STAT 302; Junior or Senior classification; knowledge of technical writing helpful. Cross-listed with NUTR 471.

**FSTC 481 Seminar (Credit 1)** ***** Approved "C" Course***
Guidelines and practice in journal article review and making effective technical presentations; strategies for conducting a job search; development of resumes and letters and interviewing targeted for careers in the food industry or graduate school.
*Prerequisite*: Senior classification in food science and technology.
*NOTE: TAKE THIS COURSE YOUR LAST FALL SEMESTER.*

**FSTC 487 Sensory Evaluation of Foods (Credit 3)**
Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques;
*Prerequisites:* CHEM 222 or CHEM 228; junior or senior classification. Cross-listed with ANSC 487.

**FSTC 497 Applied Microbiology for Foods of Animal Origin: Processing, Sanitation and Sanitary Design (Credit 3)**
Application of basic food microbiology knowledge and principles to food production processes and products; sources of microbiological contamination and their impact on food safety and spoilage; application of sanitary design and validation; testing and auditing to monitor and trouble-shoot the process.
*Prerequisite:* DASC 326 or FSTC 326 or FSTC 606 or equivalent. Cross-listed with ANSC 497.

## UNDERGRADUATE SUPPORTING COURSES

**ACCT 209 Survey of Accounting Principles (Credit 3)**
Accounting survey for non-business majors; non-technical accounting procedures, preparation and interpretation of financial statements and internal control. May not be used to satisfy degree requirements for majors in business. Business majors who choose to take this course must do so on a satisfactory/unsatisfactory basis.

**ACCT 229 Introductory Accounting (Credit 3)**
Analysis, recording and reporting of business transactions; partnership and corporation accounting; analysis and use of financial statements.
*Prerequisite*: Sophomore classification.

**AGEC 105 Introduction to Agricultural Economics (Credit 3)**
Characteristics of our economic system and basic economic concepts; survey of the farm and ranch firm and its organization and management; structure and operation of the marketing system; functional and institutional aspects of agricultural finance; government farm programs.

**AGEC 314 Marketing Agricultural and Food Products (Credit 3)**
Operations involved in movement of agricultural commodities from farmer to consumer via several intermediaries; functions involve buying, selling, transportation, storage, financing, grading, pricing and risk bearing; agricultural supply chain or value chain is studied in detail; marketing aspects of commodities and differentiated goods.
*Prerequisites*: AGEC 105 or 3 hours of economics; and junior or senior classification.

**BIOL 111 Introductory Biology (Credit 4)**
First half of an introductory two-semester survey of contemporary biology that covers the chemical basis of life, structure and biology of the cell, molecular biology and genetics; includes laboratory that reinforces and provides supplemental information related to the lecture topics..

**BICH 303 Elements of Biological Chemistry (Credit 3)**
Survey of the biochemical sciences designed for the non-biochemistry major; introduction to the chemistry and metabolism of biologically important molecules, the biochemical basis of life processes, cellular metabolism and regulation. Students requiring biochemistry in greater depth should register for BICH 410 and BICH 411. Not open to biochemistry majors.
*Prerequisite:* CHEM 222 or equivalent.

**BICH 410 Comprehensive Biochemistry I (Credit 3)**
Structure, function and chemistry of proteins and carbohydrates; kinetics, mechanisms and regulation of enzymes; metabolism of carbohydrates. Not open to biochemistry or genetics majors.
*Prerequisite:* CHEM 228 or approval of instructor.

**CHEM 119 Fundamentals of Chemistry I (Credit 3)**
Introduction to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry.

**Fundamentals of Chemistry I Laboratory (Credit 1)**

Introduction to methods and techniques of chemical experimentation; qualitative and semi-quantitative procedures applied to investigative situations.

**CHEM 120 Fundamentals of Chemistry (Credit 3)**
Theory and applications of oxidation-reductions systems; thermodynamics and kinetics; complex equilibria and solubility product; nuclear chemistry; descriptive inorganic and organic chemistry.
*Prerequisites*: CHEM 119

**Fundamentals of Chemistry II Laboratory (Credit 1)**
Introduction to analytical and synthetic methods and to quantitative techniques to both inorganic and organic compounds.

**CHEM 227 Organic Chemistry I (Credit 3)**
Introduction to chemistry of compounds of carbon. General principles and their application to various industrial and biological processes.
*Prerequisite*: CHEM 102 or 104. Concurrent registration in CHEM 237 is suggested.

**CHEM 228 Organic Chemistry II (Credit 3)**
Continuation of CHEM 227.
*Prerequisite*: CHEM 227. Concurrent registration in CHEM 238 is suggested.

**CHEM 237 Organic Chemistry Laboratory (Credit 1)**
Operations and techniques of elementary organic chemistry laboratory; preparation, reactions and properties of representative organic compounds.
*Prerequisites*: CHEM 102 or 114; CHEM 227 or registration therein.

**CHEM 238 Organic Chemistry Laboratory (Credit 1)**
Continuation of CHEM 237. *Prerequisites*: CHEM 237; CHEM 228 or registration therein.

**CHEM 315 Quantitative Analysis (Credit 3)**
Quantitative and statistical methods of analysis; solution chemistry; chemical equilibrium of analytically useful reactions; advanced analytical methods including electrochemistry, separations and kinetic methods.
Prerequisite: CHEM 102 or CHEM 120.

**CHEM 318 Quantitative Analysis Laboratory (Credit 1)**
Laboratory work consists of selected experiments in quantitative analysis designed to typify operations of general application; work is primarily volumetric with limited gravimetric experiments.
*Prerequisites*: CHEM 102 or 114; CHEM 315 or 316 or registration therein.

**ENGL 104 Composition and Rhetoric (Credit 3)**
Focus on referential and persuasive researched essays through the development of analytical reading ability, critical thinking and library research skills; **for U1 and U2 students only.**

**ENGL 210 Scientific & Technical Writing (Credit 3)**
Principles of composition and rhetoric applied to the basic genres of scientific and technical writing, including the report, proposal and manual.
*Prerequisite*: ENGL 104.

**MATH 141 Business Mathematics I (Credit 3)**
Linear equations and applications, linear forms and systems of linear equations, matrix algebra and applications, linear programming (graphical and simplex methods), probability and applications, statistics.
*Prerequisites:* High school algebra I and II and geometry. Credit will not be given for more than one of MATH 141 or 166.

**MATH 142 Business Mathematics II (Credit 3)**
Derivatives, curve sketching and optimization, techniques of derivatives,logarithms and exponential functions with applications, integrals, techniques and applications of integrals, multivariate calculus.
*Prerequisites:* High school algebra I and II and geometry or satisfactory performance on a qualifying examination. Credit will not be given for more than one of MATH 131, 142, 151 and 171.

**MGMT 209 Business, Government and Society (Credit 3)**
Impact of the external environment-legal, political, economic and international-on business behavior; market and non-market solutions to contemporary public policies confronting business persons examined including antitrust law, employment and discrimination law, product safety regulation, consumer protection and ethics. May not be used to satisfy degree requirements for majors in business.
*Prerequisites*: Sophomore classification; for students other than business and agribusiness majors.

**MGMT 309 Survey of Management (Credit 3)**
Survey of the basic functions and responsibilities of managers; includes the environmental context of management, planning and decision making, organization, structure and design, leading and managing people, and the controlling process; issues of globalization, ethics, quality and diversity integrated throughout the course
*Prerequisites*: Junior classification; for students other than business and agribusiness majors.

**NUTR 202 Fundamentals of Human Nutrition (Credit 3)**
Understand the basic chemistry and function of carbohydrates, lipids, proteins, vitamins, minerals and water Learn how these nutrients are digested, absorbed, and metabolized Apply knowledge gained for personal dietary adequacy and optimal health

**NUTR 211 Scientific Principles of Foods (Credit 4)**
Basic principles underlying selection, preparation and preservation of food in relation to quality standards, acceptability and aesthetics. Introduction to composition, nutritive value, chemical and physical properties of foods; introduction to experimental study of foods.
Prerequisites: Completion of NUTR 202 or 203, CHEM 101/111 or instructor approval.

**NUTR 320 Understanding Obesity: A Social and Scientific Challenge (Credit 3)**
Perspectives of obesity in food science, nutrition, health and psychology; study of obesity factors in relation to genetics, exercise physiology and sociology with emphasis on food and nutrition. Prerequisites: Junior or senior classification or approval of instructor.

**PHYS 201 College Physics (Credit 4)**
Fundamentals of classical mechanics, heat, and sound. Primarily for architecture, premedical, pre-dental, and pre-veterinary medical students.
*Prerequisite*: MATH 103 or equivalent.

**POLS 206 American National Government (Credit 3)**
Survey of American national government, politics, and constitutional development.

**POLS 207 State and Local Government (Credit 3)**
Survey of state and local government and politics with special reference to the constitution and politics of Texas.

**STAT 302 Statistical Methods (Credit 3)**
Intended for undergraduate students in the biological sciences and agriculture (except for agricultural economics). Introduction to concepts of random sampling and statistical inference; estimation and testing hypotheses of means and variances; Analysis of rariance; regression analysis; chi-square test. Credit will not be allowed for more than one of STAT 301, 302 or 303.
*Prerequisite*: MATH 141 or 166 or equivalent.

**CURRICULUM IN**
***FOOD SYSTEMS INDUSTRY MANAGEMENT***
**CATALOG NO. 143 (2020-2021)**

## FRESHMAN YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 201 | 3 | PHYS 201 | 4 |
| FSTC 210 | 2 | ENGL 210 | 3 |
| CHEM 119 | 4 | ECON 202 or 203 | 3 |
| ENGL 103 or 104 | 3 | MATH 140 | 3 |
| AGEC 105 | 3 | HIST 105 | 3 |
| | 15 | | 16 |

## SOPHOMORE YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| AGSM 301 | 3 | STAT 301 or 302 or 303 | 3 |
| ACCT 209 or 229 | 3 | PHYS 202 or CHEM 120 | 4 |
| POLS 206 | 3 | POLS 207 | 3 |
| MATH 142 | 3 | Language, Philosophy & Culture[2] | 3 |
| HIST 106 | 3 | | 13 |
| | 15 | | |

## JUNIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 326/327 | 4 | FSTC 315 or AGSM 315 | 3 |
| FSTC 311 | 3 | AGEC 330 | 3 |
| AGEC 340 | 3 | AGSM 360 | 3 |
| AGSM 473 | 3 | AGEC 314 | 3 |
| Technical Elective[1] | 3 | Technical Elective[1] | 3 |
| | 16 | | 15 |

## SENIOR YEAR

| *First Semester* | | *Second Semester* | |
|---|---|---|---|
| FSTC 324 | 3 | AGSM 440 | 3 |
| AGEC 453 | 3 | Creative Arts[2] | 3 |
| FSTC 470 or ANSC 470 | 3 | Technical Electives[1] | 9 |
| AGSM 439 | 3 | | 15 |
| FSTC 485 or 491 | 3 | | |
| | 15 | | |

**A total of 120 hours is required for graduation; 36 hours of 300/400 level courses are required to meet the TAMU residency requirement.**

[1]For technical electives choose from: AGEC 422; AGEC 435; AGEC 485; AGEC 489; AGEC 491; AGSM 485; AGSM 489; AGSM 491; NUTR 202; FSTC 300; ANSC/FSTC 307; FSTC 314; NUTR 320; POSC/FSTC 406; FSTC 444; ANSC/FSTC 457; FSTC 485; FSTC 489; FSTC 491.

[2]The Graduation requirements include a requirement for 3 hours of international and cultural diversity and 3 hours of cultural discourse. Selection must be from courses on the approved list. Selection can be courses that also satisfy the requirement for social and behavioral sciences; creative arts; language, philosophy and culture; or electives. For more information on core requirements visit the University Core Curriculum catalog page.

**CURRICULUM IN**
***FOOD SYSTEMS INDUSTRY MANAGEMENT***
**CATALOG NO. 143 (2020-2021)**

**University Core Curriculum**

*Citizenship*
_____ History Elective (3) ***(TCCN: HIST 1301)***
_____ History Elective (3) ***(TCCN: HIST 1302)***
_____ POLS 206 (3) ***(TCCN: GOVT2305/2302)***
_____ POLS 207 (3) ***(TCCN: GOVT 2306/2301)***

*Communication*
_____ ENGL 103 or 104 (3) ***(TCCN: 1301)*** _____ ENGL 210 (3) ***(TCCN: 2311)***

*Natural Sciences*
_____ CHEM 119 (4) ***(TCCN: 1411)***
_____ PHYS 201 (4) ***(TCCN: 1401)***
_____ PHYS 202 (4) ***(TCCN: 1402)*** **or**
CHEM 120 (4) ***(TCCN: 1412)***

*Language, Philosophy and Culture*[2]
_____ Language, Philosophy, and Culture Elective (3)

*Mathematics and Statistics*
_____ MATH 140 (3) ***(may take TCCN: 1324)***
_____ MATH 142 (3) ***(may take TCCN: 1325)***
_____STAT 301, 302, or 303 (3)

*Social and Behavioral Sciences*
_____ AGEC 105 (3)

*Creative Arts*[2]
_____ Creative Arts Elective

*International & Cultural Diversity*
_____ 3 hours ***(can be used to satisfy other requirements)***
_____ 3 hours

*Writing Intensive Credits* ***(UCRT & UWRT)***
_____ AGSM 439
_____ AGSM 440

**Required Food Systems Industry Mgmt Courses**
_____ NFSC 201 (3) (online)
_____ NFSC 210 (2)
_____ NFSC 311 (3)
_____ NFSC 315 or AGSM 315)(3)
_____ NFSC 324 (3)
_____ NFSC or ANSC 326/327 (4)
_____ NFSC 470 or ANSC 470 (3)
_____ AGEC 314 (3)
_____ AGEC 330 (3)
_____ AGEC 340 (3)
_____ AGEC 453 (3)
_____ AGMS 301 (3)
_____ AGSM 439 (3)
_____ AGSM 440 (3)
_____ AGSM 360 (3)
_____ AGSM 473 (3)
_____ NFSC 485 OR 491 (3) (Internship)

**Business Requirement (6)**
_____ ACCT 209 or 229 (3)
_____ ECON 202 or 203 (3)

**Technical Electives**[1] **(15)**
_____ See List Below

**A total of 120 hours is required for graduation; 36 hours of 300/400 level courses are required to meet the TAMU residency requirement**.

[1]For technical electives choose from: AGEC 422; AGEC 435; AGEC 485; AGEC 489; AGEC 491; AGSM 485; AGSM 489; AGSM 491; NFSC 202; NFSC 300; ANSC/NFSC 307; NFSC 314; NFSC 320; POSC/NFSC 406; NFSC 444; ANSC/NFSC 457; NFSC 485; NFSC 489; NFSC 491.

[2]The Graduation requirements include a requirement for 3 hours of international and cultural diversity and 3 hours of cultural discourse. Selection must be from courses on the approved list. Selection can be courses that also satisfy the requirement for social and behavioral sciences; creative arts; language, philosophy and culture; or electives. For more information on core requirements visit **core.tamu.edu**.

# NOTES:

# COURSE DESCRIPTIONS FOR FOOD SYSTEMS INDUSTRY MANAGEMENT

**FSTC 201 Food Science** *Credits 3. 3 Lecture Hours.*

(AGRI 1329) Food Science. The fundamental biological, chemical and physical scientific principles associated with the study of foods; topics include food composition and nutrition, food additives and regulations, food safety and toxicology, food processing, food engineering, food biotechnology, product development and sensory evaluation.

**FSTC 210 Horizons in Nutrition and Food Science** *Credits 2. 2 Lecture Hours.*

Introduction to nutrition and food science career opportunities through presentations by nutrition and food science researchers and industry professionals; addresses issues of professionalism including portfolio development, teamwork, and critical thinking skills.

**FSTC 311/HORT 311 Principles of Food Processing** *Credits 3. 2 Lecture Hours. 3 Lab Hours.*

Principles and practices of canning, freezing, dehydration, pickling and specialty food manufacture; fundamental concepts of various techniques of preparation, processing, packaging and use of additives; processing plants visited.
**Prerequisite:**FSTC 201; junior or senior classification or approval of department head or instructor.
**Cross Listing:** HORT 311/FSTC 311.

**FSTC 315 Food Process Engineering Technology** *Credits 3. 2 Lecture Hours. 2 Lab Hours***.**

Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.
**Prerequisites:** Grade of C or better in PHYS 201 or PHYS 218, or approval of instructor.
**Cross Listing:** AGSM 315/FTSC 315.

**FSTC 326 Food Bacteriology** *Credits 3. 3 Lecture Hours.*

Microbiology of human foods and accessory substances; raw and processed foods; physical, chemical and biological phases of spoilage; standard industry techniques of inspection and control.
**Cross Listing:**ANSC 326.

**FSTC 457/ANSC 457 Hazard Analysis and Critical Control Point System** *Credits 3. 3 Lecture Hours.*

Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices and standard operating procedures development.
**Prerequisite:** FSTC 326/ANSC 326 or approval of instructor.
**Cross Listing:** ANSC 457/FSTC 457.

**FSTC 470/ANSC 470 Quality Assurance for the Food Industry** *Credits 3. 3 Lecture Hours.*

Principles of food system process control including statistical process control (SPC) and the tools required to assure uniform communication and understanding of quality assurance systems.
**Prerequisite:** Junior or senior classification.
**Cross Listing:** ANSC 470/FSTC 470.

**FSTC 489 Special Topics in...** *Credits 1 to 4. 1 to 4 Other Hours.*

Selected topics in an identified area of nutrition and food science. May be repeated for credit.
**Prerequisite:** Junior or senior classification

**ACCT 209 Survey of Accounting Principles** *Credits 3. 3 Lecture Hours.*

Accounting survey for non-business majors; non-technical accounting procedures, preparation and interpretation of financial statements and internal control. May not be used to satisfy degree requirements for majors in business. Business majors who choose to take this course must do so on a satisfactory/unsatisfactory basis.

**ACCT 229 Introductory Accounting** *Credits 3. 3 Lecture Hours.*

(ACCT 2301, 2401) Introductory Accounting. Analysis, recording and reporting of business transactions; partnership and corporation accounting; analysis and use of financial statements.
**Prerequisite:** Sophomore classification.

**AGEC 105 Introduction to Agricultural Economics** *Credits 3. 3 Lecture Hours.*

(AGRI 2317) Introduction to Agricultural Economics. Characteristics of our economic system and basic economic concepts; survey of the farm and ranch firm and its organization and management; structure and operation of the marketing system; functional and institutional aspects of agricultural finance; government farm programs.

**AGEC 314 Marketing Agricultural and Food Products** *Credits 3. 3 Lecture Hours.*

Operations involved in movement of agricultural commodities from farmer to consumer via several intermediaries; functions involve buying, selling, transportation, storage, financing, grading, pricing and risk bearing; agricultural supply chain or value chain is studied in detail; marketing aspects of commodities and differentiated goods.
**Prerequisites:** AGEC 105 or 3 hours of economics; and junior or senior classification

**AGEC 317 Economic Analysis for Agribusiness Management** *Credits 3. 3 Lecture Hours.*

Quantitative methods used to address managerial problems, specifically calculus-based optimization, marginal analysis, elasticities, statistical and forecasting techniques, linear programming, and risk analysis; emphasis on theoretical aspects and applied analysis of managerial problems faced by agricultural firms.
**Prerequisites:** AGEC 217; ECON 322 or ECON 323; SCMT 303 or STAT 301 or STAT 302 or STAT 303; and junior or senior classification; agricultural economics, agribusiness majors only; or approval of department head.

**AGEC 330 Financial Management in Agriculture** *Credits 3. 3 Lecture Hours.*

Principles of financial management of farms, ranches, and other agribusiness firms; financial statements, financial statement analysis, time value of money, investment analysis, firm growth, risk management, credit analysis and best business management practices.
**Prerequisites:** AGEC 105 or 3 hours of economics; ACCT 209 or ACCT 229; and junior or senior classification.

**AGEC 340 Agribusiness Management** *Credits 3. 3 Lecture Hours.*

Survey of management practices throughout the food marketing chain; focuses on farm and ranch suppliers, farmers and ranchers, first handlers, food processors, food distributors, and restaurants, food retailers and institutions; use of case studies and models for the purpose of evaluating firm management success.
**Prerequisites:** AGEC 105 or 3 hours of economics; and junior or senior classification.

**AGEC 453 International Agribusiness Marketing** *Credits 3. 3 Lecture Hours.*

Basic competencies in international marketing of agri-foods; and market entry, pricing, payment, finance, and promotion.
**Prerequisites:** AGEC 105 or 3 hours of economics; and junior or senior classification.

**AGEC 489/NFSC 489/AGMS 489 Special Topics in...** *Credits 1 to 4. 1 to 4 Lecture Hours.*

Selected topics in an identified area of AGEC, AGSM and NFSC. May be repeated for credit.
**Prerequisite:** Junior or senior classification.refrigeration and insulation, temperature

**AGSM 301 Systems Analysis in Agriculture** *Credits 3. 3 Lecture Hours.*

Operations research and systems theory applied to management problems in food and agricultural industries; linear programming, queuing theory, simulation and critical path method; provides the knowledge and computer skills to better manage resources for the evolving agricultural industries.
**Prerequisites:** MATH 141 and MATH 142 with a grade of C or better.

**AGSM 315 Food Process Engineering Technology** *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.
**Prerequisites:** PHYS 201 or PHYS 218, or approval of instructor.
**Cross Listing:** FSTC 315/AGSM 315.

**AGSM 360 Occupational Safety Management** *Credits 3. 2 Lecture Hours. 2 Lab Hours.*

Safety considerations in the work environment, including safety mandates, safety mission, personal and business liability, fire, chemical, dust, machine noise, personal protective devices; design and implementation of safety programs.
**Prerequisite:** Junior or senior classification.

**AGSM 473 Project Management for Agricultural Systems Technology** *Credits 3. 3 Lecture Hours.*

Development of fundamental skill set in project management; basic knowledge of project management methods, tools and techniques; includes organization and life cycle, management processes, integration management, time management, cost management, quality management, communications management, risk management, procurement management, stakeholder management.
**Prerequisites:** AGSM 301 and senior classification.

**AGSM 484/AGEC 484/NFSC 484 - Internship** *Credits 0 to 6. 0 to 6 Other Hours.*

Practical experience working in a professional agricultural and/or food systems management setting. May be taken three times.
**Prerequisites:** Junior or senior classification; approval of the instructor.

**CHEM 119 Fundamentals of Chemistry I** *Credits 3. 3 Lecture Hours.*

(CHEM 1311, 1111; 1411*) Fundamentals of Chemistry I. Introduction to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry.

**CHEM 120 Fundamentals of Chemistry II** *Credits 3. 3 Lecture Hours.*

(CHEM 1312, 1112; 1412) Fundamentals of Chemistry II. Theory and applications of oxidation-reductions systems; thermodynamics and kinetics; complex equilibria and solubility product; nuclear chemistry; descriptive inorganic and organic chemistry.

**ECON 202 Principles of Economics** *Credits 3. 3 Lecture Hours.*

(ECON 2302) Principles of Economics. Elementary principles of economics; the economic problem and the price system; theory of demand, theory of production and the firm, theory of supply; the interaction of demand and supply.

**ECON 203 Principles of Economics** *Credits 3. 3 Lecture Hours.*

(ECON 2301) Principles of Economics. Measurement and determination of national income, employment and price; introduction to monetary and fiscal policy analysis; the effects of government deficits and debt, exchange rates and trade balances.
**Prerequisite:** ECON 202 or approval of undergraduate advisor.

**ENGL 103 Introduction to Rhetoric and Composition** *Credits 3. 3 Lecture Hours.*

(ENGL 1301) Introduction to Rhetoric and Composition. Intensive study of and practice in writing processes, from invention and researching to drafting, revising and editing, both individually and corroboratively; emphasis on effective rhetorical choices including audience, purpose, arrangement and style; focus on writing the academic essay as a vehicle for learning, communicating and critical analysis.

**ENGL 104 Composition and Rhetoric** *Credits 3. 3 Lecture Hours.*

(ENGL 1302) Composition and Rhetoric. Focus on referential and persuasive researched essays through the development of analytical reading ability, critical thinking and library research skills; for freshman and sophomore students only.

**ENGL 210 Technical and Business Writing** *Credits 3. 3 Lecture Hours.*

(ENGL 2311) Technical and Business Writing. Focus on writing for professional settings; correspondence and researched reports fundamental to the technical and business workplace—memoranda, business letters, research proposals and presentations, use of graphical and document design; emphasis on audience awareness, clarity of communication and collaborative team-work.

**MATH 140 Mathematics for Business and Social Sciences** *Credits 3. 3 Lecture Hours.*

(MATH 1324) Mathematics for Business and Social Sciences. (3.0). Application of common algebraic functions, including polynomial, exponential, logarithmic and rational, to problems in business, economics and the social sciences; includes mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. No credit will be given for more than one of MATH 140, MATH 141 and MATH 166.
**Prerequisite:** High school algebra I and II and geometry.

**MATH 141 Finite Mathematics** *Credits 3. 3 Lecture Hours.*

Linear equations and applications; systems of linear equations, matrix algebra and applications, linear programming, probability and applications, statistics. No credit will be given for more than one of MATH 140, MATH 141 and MATH 166.
**Prerequisites:** High school algebra I and II and geometry.

**MATH 142 Business Calculus** *Credits 3. 3 Lecture Hours.*

(MATH 1325, MATH 1425) Business Calculus. Limits and continuity; techniques and applications of derivatives including curve sketching and optimization; techniques and applications of integrals; emphasis on applications in business, economics, and social sciences. Only one of the following will satisfy the requirements for a degree: MATH 131, MATH 142, MATH 147, MATH 151 and MATH 171.
**Prerequisites:** MATH 140 or equivalent or acceptable score on Texas A&M University math placement exam.

**PHYS 201 College Physics** *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1301 and 1101, 1401) College Physics. Fundamentals of classical mechanics, heat, and sound. Primarily for architecture, education, premedical, predental, and preveterinary medical students.

**PHYS 202 College Physics** *Credits 4. 3 Lecture Hours. 3 Lab Hours.*

(PHYS 1302 and 1102, 1402) College Physics. Continuation of PHYS 201. Fundamentals of classical electricity and light; introduction to contemporary physics.
**Prerequisite:** PHYS 201.

**STAT 302 Statistical Methods** *Credits 3. 3 Lecture Hours.*

Intended for undergraduates in the biological sciences. Introduction to concepts of random sampling and statistical inference; estimation and testing hypotheses of means and variances; analysis of variance; regression analysis; chi-square tests. Only one of the following will satisfy the requirements for a degree: STAT 301, STAT 302 or STAT 303.
**Prerequisite:** MATH 141 or MATH 166 or equivalent; junior or senior classification.

## FINANCIAL AID, SCHOLARSHIPS AND TUITION REBATES

**Financial Aid**

Financial aid consists of scholarships and grants, loans and part-time employment. To determine your eligibility to receive financial assistance, you must submit the Free Application for Federal Student Aid (FAFSA) each academic year. You may access the electronic version of the FAFSA online at www.fafsa.ed.gov. To contact a financial aid counselor call (979) 845-3236. Information concerning tuition, fees, and financial aid is published in the Texas A&M University Undergraduate Catalog or online at http://financialaid.tamu.edu/.

**Scholarships:**

- **Department of Nutrition & Food Science (for continuing students)**
  - Deadline: Check with the Advising Office- typically February 1st.
  - Students are recognized at the Department Banquet during Parent's Weekend.
  - Amounts vary depending upon scholarship
  - Scholarship application will be posted at https://foodscience.tamu.edu
- **Institute of Food Technologists**
  - Deadline: Check Website www.ift.org *dependent upon classification*
  - Amounts vary
  - IFT has scholarships for incoming freshmen in Food Science.
- **Texas Food Processors Association**
  - Deadline: Usually in October.
  - Applications available in the advising office and online at https://foodscience.tamu.edu
  - Amounts vary.
- **Alamo and Longhorn IFT**
  - Deadline: Usually in October.
  - Applications available in the advising office and online at https://foodscience.tamu.edu
  - Amounts vary.

**Refund of Tuition and Fees:** A student may drop courses during the first four days of a fall or spring semester. Refunds will not be issued for classes dropped after the 12th class day of a full semester. Please see the TAMU official academic calendar for specific dates.

**Tuition Rebate:** Certain undergraduate students who attempt not more than three hours in excess of the minimum number of semester credit hours required to complete the degree in the catalog under which they will graduate may be entitled to a $1,000 rebate if they meet the criteria. Students must apply PRIOR to commencement during their last term. Several conditions apply and students must meet all specified criteria.

## HELPFUL WEBSITES

- TAMU homepage: https://www.tamu.edu/
- Department of Food Science: https://foodscience.tamu.edu
- Office of Admissions and Records: http://www.tamu.edu/admissions/
- Student Financial Aid: https//:financialaid.tamu.edu
- TAMU Student Organizations: **http://getinvolved.tamu.edu/**
- Institute of Food Technologists: www.ift.org

## STUDENT ORGANIZATIONS

A broad education involves not only course work to develop professional expertise and knowledge, but also learning and developing social and leadership skills. Students are encouraged to become actively involved in on-campus and off-campus organizations. Food Science students often choose to participate in one or more of these groups:

### Institute of Food Technologists Student Association - Texas A&M Chapter

- Supports and encourages both undergraduate and graduate students enrolled in the Food Science and Technology program. Members may attend presentations by food industry representatives, participate in fundraising and social activities, visit local food production facilities, and travel to regional and/or state professional conferences and events.

### IFT National Student Association

- Food Science and Technology majors may apply for student membership in the Institute of Food Technologists (IFT), thus automatically becoming members of the IFT Student Association. The IFT Student Association offers special services and activities, including area meetings, Food Product Development team competition, special programs at the IFT Annual Meeting, research paper competitions, Student Chapter of the Year competition, and Food Technology College Bowl. The IFT Student Association, which is run by and for the students, also provides students a voice in IFT affairs and committees.

## Links to Some of the Largest Food Companies

- Phillip Morris Co., Inc. / www.kraftfoods.com
- Pepsico, Inc. / www.pepsico.com
- Coca-Cola, Inc. / www.cocacola.com
- ConAgra, Inc. / www.healthychoice.com
- Del Monte, Inc / http://www.delmonte.com/Company
- Heinz / http://www.heinz.com
- IBP, Inc. / www.ibpinc.com
- Anheuser-Busch Co., Inc. / www.budweiser.com
- Campbell Soup Co. / www.campbellsoups.com
- Seagram Co. / www.seagram.com
- Kellogg Co. / www.kelloggs.com
- Tyson Foods, Inc. / www.tyson.com
- General Mills / www.general-mills.com
- Quaker Oats Co. / www.quakeroats.com
- Proctor & Gamble / www.pg.com
- Hershey Foods / www.hersheys.com

# NOTES:

# Appendix B

## Texas Common Course Numbering System

The Texas Common Course Numbering System (TCCNS) has been designed for the purpose of aiding students in the transfer of general academic courses between colleges and universities throughout Texas. Common courses are freshman and sophomore academic credit courses that have been identified as common by institutions that are members of the common course numbering system. The system ensures that if the student takes the courses the receiving institution designates as common, then the courses will be accepted in transfer and the credit will be treated as if the courses had actually been taken on the receiving institution's campus.

The table below lists the courses Texas A&M University has identified as common and their TCCNS equivalents. Before using this table students should be sure that the institution they attend employs the TCCNS.

This table is revised quarterly in January, March, June and September. The most recent version may be obtained from the Office of Admissions.

The current version of this document may be found on the Office of Admissions website at admissions.tamu.edu.

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| ACCT | 229 | Intro. Accounting | ACCT | 2301 |
| ACCT | 229 | Intro. Accounting | ACCT | 2401 |
| ACCT | 230 | Intro. Accounting | ACCT | 2302 |
| ACCT | 230 | Intro. Accounting | ACCT | 2402 |
| AGEC | 105 | Intro. to Agri. Economics | AGRI | 2317 |
| AGLS | 101 | Mod. Agri. Systems and Ren. Nat. Res. | AGRI | 1131 |
| AGLS | 101 | Mod. Agri. Systems and Ren. Nat. Res. | AGRI | 1231 |
| AGLS | 201 | Computer Applications in Agri. | AGRI | 1309 |
| AGSM | 201 | Farm Tractors and Power Units | AGRI | 2301 |
| ANSC | 107 | General Animal Science | AGRI | 1319 |
| ANSC | 107 and 108 | General Animal Science | AGRI | 1419 |
| ANTH | 201 | Intro. to Anthropology | ANTH | 2346 |
| ANTH | 201 | Intro. to Anthropology | HUMA | 2323 |
| ANTH | 202 | Intro. to Archaeology | ANTH | 2302 |
| ANTH | 210 | Social and Cultural Anthropology | ANTH | 2351 |
| ARAB | 101 | Beginning Arabic I | ARAB | 1411 |
| ARAB | 101 | Beginning Arabic I | ARAB | 1511 |
| ARAB | 102 | Beginning Arabic II | ARAB | 1412 |
| ARAB | 102 | Beginning Arabic II | ARAB | 1512 |
| ARAB | 201 | Intermediate Arabic I | ARAB | 2311 |
| ARAB | 202 | Intermediate Arabic II | ARAB | 2312 |
| ARCH | 249 | Survey of Architectural History I | ARCH | 1301 |
| ARCH | 250 | Survey of Architectural History II | ARCH | 1302 |
| ARTS | 103 | Design I | ARTS | 1311 |
| ARTS | 111 | Drawing I | ARTS | 1316 |
| ARTS | 112 | Drawing II | ARTS | 1317 |
| ARTS | 149 | Art History Survey I | ARTS | 1303 |
| ARTS | 150 | Art History Survey II | ARTS | 1304 |
| ASTR | 101 | Basic Astronomy | ASTR | 1303 |
| ASTR | 101 | Basic Astronomy | PHYS | 1311 |
| ASTR | 101 and 102 | Basic Astronomy and Observational Astronomy | ASTR | 1404 |
| ASTR | 101 and 102 | Basic Astronomy and Observational Astronomy | PHYS | 1411 |

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| ASTR | 111 | Overview of Modern Astronomy | ASTR | 1303 and 1103 |
| ASTR | 111 | Overview of Modern Astronomy | ASTR | 1403 |
| BIOL | 101 | Botany | BIOL | 1311 and 1111 |
| BIOL | 101 | Botany | BIOL | 1411 |
| BIOL | 107 | Zoology | BIOL | 1313 and 1113 |
| BIOL | 107 | Zoology | BIOL | 1413 |
| BIOL | 111 | Intro. Biology I | BIOL | 1306 and 1106 |
| BIOL | 111 | Intro. Biology I | BIOL | 1406 |
| BIOL | 112 | Intro. Biology II | BIOL | 1307 and 1107 |
| BIOL | 112 | Intro. Biology II | BIOL | 1407 |
| BIOL | 206 | Intro. Microbiology | BIOL | 2321 and 2121 |
| BIOL | 206 | Intro. Microbiology | BIOL | 2421 |
| CHEM | 101 | Fund. of Chemistry I | CHEM | 1311 |
| CHEM | 101 and 111 | Fund. of Chemistry I | CHEM | 1411 |
| CHEM | 102 | Fund. of Chemistry II | CHEM | 1312 |
| CHEM | 102 and 112 | Fund. of Chemistry II | CHEM | 1412 |
| CHEM | 106 | Molecular Science for Citizens | CHEM | 1305 |
| CHEM | 106 and 116 | Molecular Science for Citizens and Lab. | CHEM | 1405 |
| CHEM | 111 | Fund. of Chemistry I Lab | CHEM | 1111 |
| CHEM | 112 | Fund. of Chemistry II Lab | CHEM | 1112 |
| CHEM | 116 | Molecular Science for Citizens Lab. | CHEM | 1105 |
| CHEM | 227 | Organic Chemistry I | CHEM | 2323 |
| CHEM | 227 and 237 | Organic Chemistry I and Organic Chemistry Lab. | CHEM | 2423 |
| CHEM | 228 | Organic Chemistry II | CHEM | 2325 |
| CHEM | 228 and 238 | Organic Chemistry II and Organic Chemistry Lab. | CHEM | 2425 |
| CHEM | 237 | Organic Chemistry I Lab. | CHEM | 2123 |
| CHEM | 237 | Organic Chemistry I Lab. | CHEM | 2223 |
| CHEM | 238 | Organic Chemistry II Lab. | CHEM | 2125 |
| CHEM | 238 | Organic Chemistry II Lab. | CHEM | 2225 |
| CHIN | 101 | Beginning Chinese I | CHIN | 1411 |
| CHIN | 101 | Beginning Chinese I | CHIN | 1511 |
| CHIN | 102 | Beginning Chinese II | CHIN | 1412 |
| CHIN | 102 | Beginning Chinese II | CHIN | 1512 |
| CHIN | 201 | Intermediate Chinese I | CHIN | 2311 |
| CHIN | 202 | Intermediate Chinese II | CHIN | 2312 |
| CLAS | 101 | Beginning Classical Greek I | GREE | 1411 |
| CLAS | 101 | Beginning Classical Greek I | GREE | 1511 |
| CLAS | 102 | Beginning Classical Greek II | GREE | 1412 |
| CLAS | 102 | Beginning Classical Greek II | GREE | 1512 |
| CLAS | 121 | Beginning Latin I | LATI | 1411 |
| CLAS | 121 | Beginning Latin I | LATI | 1511 |
| CLAS | 122 | Beginning Latin II | LATI | 1412 |
| CLAS | 122 | Beginning Latin II | LATI | 1512 |
| CLAS | 211 | Intermediate Greek | GREE | 2311 |
| CLAS | 221 | Intermediate Latin | LATI | 2311 |
| COMM | 101 | Intro. to Speech Communication | SPCH | 1311 |
| COMM | 203 | Public Speaking | SPCH | 1315 |
| COMM | 210 | Group Communication and Discussion | SPCH | 2333 |
| COMM | 215 | Interviewing: Principles and Practice | COMM | 2316 |
| COMM | 215 | Interviewing: Principles and Practice | SPCH | 2316 |
| COMM | 243 | Argumentation and Debate | SPCH | 2335 |
| COMM | 290 | Speech Practicum | SPCH | 1144 |
| COMM | 290 | Speech Practicum | SPCH | 1145 |
| COMM | 290 | Speech Practicum | SPCH | 1146 |
| COMM | 290 | Speech Practicum | SPCH | 2144 |
| COMM | 290 | Speech Practicum | SPCH | 2145 |
| COSC | 253 | Const. Materials and Methods I | ARCH | 2312 |
| COSC | 254 | Const. Materials and Methods II | ARCH | 2313 |

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| CSCE | 206 | Structured Prog. in C | BCIS | 1420 |
| CSCE | 206 | Structured Prog. in C | COSC | 1420* |
| CVEN | 201 | Plane Surveying | ENGR | 1307 |
| CVEN | 201 | Plane Surveying | ENGR | 1407 |
| DASC | 202 | Dairying | AGRI | 1311 |
| DCED | 160 | Ballet I | DANC | 1241 |
| DCED | 161 | Ballet II | DANC | 1242 |
| DCED | 162 | Ballet III | DANC | 2241 |
| DCED | 168 | Jazz Dance III | DANC | 2247 |
| DCED | 171 | Modern Dance I | DANC | 1245 |
| DCED | 172 | Modern Dance II | DANC | 1246 |
| DCED | 173 | Modern Dance III | DANC | 2245 |
| ECON | 202 | Principles of Microeconomics | ECON | 2302 |
| ECON | 203 | Principles of Macroeconomics | ECON | 2301 |
| ENDG | 105 | Engineering Graphics | ENGR | 1204 |
| ENDG | 105 | Engineering Graphics | ENGR | 1304 |
| ENDS | 101 | Design Process | ARCH | 1311 |
| ENDS | 105 | Design Foundations I | ARCH | 1403 |
| ENDS | 106 | Design Foundations II | ARCH | 1404 |
| ENDS | 115 | Design Communication Foundations | ARCH | 1307 |
| ENDS | 115 | Design Communication Foundations | ARCH | 1407 |
| ENDS | 116 | Design Communication Foundations II | ARCH | 1308 |
| ENDS | 116 | Design Communication Foundations II | ARCH | 1408 |
| ENGL | 104 | Composition and Rhetoric | ENGL | 1301 |
| ENGL | 203 | Intro. to Literature | ENGL | 1302 |
| ENGL | 210 | Scientific and Technical Writing | ENGL | 2311 |
| ENGL | 221 | World Literature | ENGL | 2332 |
| ENGL | 222 | World Literature | ENGL | 2333 |
| ENGL | 227 | American Literature: Colonial to Amer. Renaissance | ENGL | 2327 |
| ENGL | 228 | American Literature: Civil War to Present | ENGL | 2328 |
| ENGL | 231 | Survey of English Literature I | ENGL | 2322 |
| ENGL | 232 | Survey of English Literature II | ENGL | 2323 |
| ENGL | 235 | Intro. to Creative Writing: Prose | ENGL | 2307 |
| FILM | 251 | Intro. to Film Analysis | COMM | 2366 |
| FINC | 201 | Personal Finance | BUSI | 1307 |
| FINC | 201 | Personal Finance | HECO | 1307 |
| FREN | 101 | Beginning French I | FREN | 1411 |
| FREN | 101 | Beginning French I | FREN | 1511 |
| FREN | 102 | Beginning French II | FREN | 1412 |
| FREN | 102 | Beginning French II | FREN | 1512 |
| FREN | 201 | Intermediate French I | FREN | 2311 |
| FREN | 202 | Intermediate French II | FREN | 2312 |
| FRSC | 203 | Forest Trees of North America | FORE | 1314 |
| FSTC | 201 | Food Science | AGRI | 1329 |
| GEOG | 201 | Intro. to Human Geography | GEOG | 1302 |
| GEOG | 202 | Geography of the Global Village | GEOG | 1303 |
| GEOL | 101 | Principles of Geology | GEOL | 1303 and 1103 |
| GEOL | 101 | Principles of Geology | GEOL | 1403 |
| GEOL | 106 | Historical Geology | GEOL | 1304 and 1104 |
| GEOL | 106 | Historical Geology | GEOL | 1404 |
| GERM | 101 | Beginning German I | GERM | 1411 |
| GERM | 101 | Beginning German I | GERM | 1511 |
| GERM | 102 | Beginning German II | GERM | 1412 |
| GERM | 102 | Beginning German II | GERM | 1512 |
| GERM | 201 | Intermediate German I | GERM | 2311 |
| GERM | 202 | Intermediate German II | GERM | 2312 |
| HIST | 101 | Western Civilization to 1660 | HIST | 2311 |
| HIST | 102 | Western Civilization since 1660 | HIST | 2312 |
| HIST | 103 | World History to 1500 | HIST | 2321 |

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| HIST | 104 | World History since 1500 | HIST | 2322 |
| HIST | 105 | History of the United States | HIST | 1301 |
| HIST | 106 | History of the United States | HIST | 1302 |
| HIST | 213 | History of England | HIST | 2313 |
| HIST | 214 | History of England | HIST | 2314 |
| HIST | 226 | History of Texas | HIST | 2301 |
| HLTH | 216 | First Aid | PHED | 1206 |
| HLTH | 216 | First Aid | PHED | 1306 |
| HLTH | 231 | Healthy Lifestyles | PHED | 1304 |
| HORT | 201 | General Horticulture | AGRI | 1315 |
| HORT | 201 | General Horticulture | AGRI | 1415 |
| HORT | 201 | General Horticulture | HORT | 1301 |
| HORT | 201 | General Horticulture | HORT | 1401 |
| ITAL | 101 | Beginning Italian I | ITAL | 1411 |
| ITAL | 101 | Beginning Italian I | ITAL | 1511 |
| ITAL | 102 | Beginning Italian II | ITAL | 1412 |
| ITAL | 102 | Beginning Italian II | ITAL | 1512 |
| ITAL | 201 | Intermediate Italian I | ITAL | 2311 |
| ITAL | 202 | Intermediate Italian II | ITAL | 2312 |
| JAPN | 101 | Beginning Japanese I | JAPN | 1411 |
| JAPN | 101 | Beginning Japanese I | JAPN | 1511 |
| JAPN | 102 | Beginning Japanese II | JAPN | 1412 |
| JAPN | 102 | Beginning Japanese II | JAPN | 1512 |
| JAPN | 201 | Intermediate Japanese I | JAPN | 2311 |
| JAPN | 202 | Intermediate Japanese II | JAPN | 2312 |
| JOUR | 102 | American Mass Media | COMM | 1307 |
| JOUR | 203 | Media Writing I | COMM | 2311 |
| KINE | 160 | Ballet I | DANC | 1141 |
| KINE | 161 | Ballet II | DANC | 1142 |
| KINE | 999 | Ballet III | DANC | 2141 |
| KINE | 999 | Jazz Dance I | DANC | 1147 |
| KINE | 167 | Jazz Dance II | DANC | 1148 |
| KINE | 999 | Jazz Dance III | DANC | 2147 |
| KINE | 169 | Tap I | DANC | 1110 |
| KINE | 170 | Tap II | DANC | 1111 |
| KINE | 171 | Modern Dance I | DANC | 1145 |
| KINE | 172 | Modern Dance II | DANC | 1146 |
| KINE | 999 | Modern Dance III | DANC | 2145 |
| KINE | 198 | Health & Fitness Activity | PHED | 1164 |
| KINE | 198 | Health & Fitness Activity | PHED | 1238 |
| KINE | 199 | Required Physical Activity | PHED | Any 1-hour activity course |
| KINE | 213 | Foundations of Kinesiology | PHED | 1301 |
| KINE | 214 | Health & Physical Activity for Children | PHED | 1331 |
| KINE | 215 | Fundamentals of Coaching | PHED | 1321 |
| KINE | 215 | Fundamentals of Coaching | PHED | 1322 |
| MATH | 102 | Algebra | MATH | 1314 |
| MATH | 102 | Algebra | MATH | 1414 |
| MATH | 103 | Plane Trigonometry | MATH | 1316 |
| MATH | 141 | Business Math. I | MATH | 1324 |
| MATH | 142 | Business Math. II | MATH | 1325 |
| MATH | 150 | Functions,Trigonometry and Linear Systems | MATH | 2412 |
| MATH | 151 | Engineering Math. I | MATH | 2413 |
| MATH | 151 | Engineering Math. I | MATH | 2513 |
| MATH | 152 | Engineering Math. II | MATH | 2414 |
| MATH | 251 | Engineering Math. III | MATH | 2316 |
| MATH | 253 | Engineering Math. III | MATH | 2415 |
| MGMT | 105 | Intro. to Business | BUSI | 1301 |
| MGMT | 212 | Business Law | BUSI | 2301 |
| MUSC | 102 | Fundamentals of Music | MUSI | 1300 |

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| MUSC | 102 | Fundamentals of Music | MUSI | 1301 |
| MUSC | 102 | Fundamentals of Music | MUSI | 1303 |
| MUSC | 102 | Fundamentals of Music | MUSI | 1304 |
| MUSC | 201 | Music and the Human Experience | MUSI | 1306 |
| MUSC | 204 | Music Theory I | MUSI | 1211 |
| MUSC | 205 | Music Theory II | MUSI | 1212 |
| MUSC | 206 | Music Theory III | MUSI | 2211 |
| MUSC | 206 | Music Theory III | MUSI | 2212 |
| MUSC | 206 | Music Theory III | MUSI | 2311 |
| MUSC | 206 | Music Theory III | MUSI | 2312 |
| MUSC | 208 | Musicianship I | MUSI | 1116 |
| MUSC | 208 | Musicianship I | MUSI | 1216 |
| MUSC | 210 | Musicianship II | MUSI | 1117 |
| MUSC | 210 | Musicianship II | MUSI | 1217 |
| MUSC | 245 | Composition I | MUSI | 1386 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 1114 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 1115 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 1181 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 1182 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 2115 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 2181 |
| MUSC | 250 | Individual Performance—Piano I | MUSI | 2182 |
| MUSC | 251 | Individual Performance—Voice I | MUSI | 1183 |
| MUSC | 251 | Individual Performance—Voice I | MUSI | 1184 |
| MUSC | 251 | Individual Performance—Voice I | MUSI | 2183 |
| MUSC | 251 | Individual Performance—Voice I | MUSI | 2184 |
| NUTR | 202 | Fundamentals of Human Nutrition | BIOL | 1322 |
| NUTR | 202 | Fundamentals of Human Nutrition | HECO | 1322 |
| PHIL | 111 | Contemporary Moral Issues | PHIL | 2306 |
| PHIL | 240 | Intro. to Logic | PHIL | 2303 |
| PHIL | 251 | Intro. to Philosophy | PHIL | 1301 |
| PHYS | 201 | College Physics | PHYS | 1301 and 1101 |
| PHYS | 201 | College Physics | PHYS | 1401 |
| PHYS | 202 | College Physics | PHYS | 1302 and 1102 |
| PHYS | 202 | College Physics | PHYS | 1402 |
| PHYS | 208 | Electricity | PHYS | 2326 and 2126 |
| PHYS | 208 | Electricity | PHYS | 2426* |
| PHYS | 218 | Mechanics | PHYS | 2325 and 2125 |
| PHYS | 218 | Mechanics | PHYS | 2425* |
| POLS | 206 | American National Government | GOVT | 2305 |
| POLS | 207 | State and Local Government | GOVT | 2306 |
| POLS | 209 | Intro. to Political Science Research | GOVT | 2304 |
| PORT | 101 | Beginning Portuguese I | PORT | 1411 |
| PORT | 101 | Beginning Portuguese I | PORT | 1511 |
| PORT | 102 | Beginning Portuguese II | PORT | 1412 |
| PORT | 102 | Beginning Portuguese II | PORT | 1512 |
| PORT | 201 | Intermediate Portuguese I | PORT | 2311 |
| PORT | 202 | Intermediate Portuguese II | PORT | 2312 |
| POSC | 201 | General Avian Science | AGRI | 1327 |
| PSYC | 107 | Intro. to Psychology | PSYC | 2301 |
| RPTS | 201 | Foundations of Recreation and Parks | PHED | 1336 |
| RUSS | 101 | Beginning Russian I | RUSS | 1411 |
| RUSS | 101 | Beginning Russian I | RUSS | 1511 |
| RUSS | 102 | Beginning Russian II | RUSS | 1412 |
| RUSS | 102 | Beginning Russian II | RUSS | 1512 |
| RUSS | 201 | Intermediate Russian I | RUSS | 2311 |
| RUSS | 202 | Intermediate Russian II | RUSS | 2312 |
| SCSC | 105 | World Food and Fiber Crops | AGRI | 1307 |
| SCSC | 105 | World Food and Fiber Crops | AGRI | 1407 |

| Texas A&M Course | | | TCCNS Equivalent Course | |
|---|---|---|---|---|
| SOCI | 205 | Intro. to Sociology | SOCI | 1301 |
| SPAN | 101 | Beginning Spanish I | SPAN | 1411 |
| SPAN | 101 | Beginning Spanish I | SPAN | 1511 |
| SPAN | 102 | Beginning Spanish II | SPAN | 1412 |
| SPAN | 102 | Beginning Spanish II | SPAN | 1512 |
| SPAN | 201 | Intermediate Spanish I | SPAN | 2311 |
| SPAN | 202 | Intermediate Spanish II | SPAN | 2312 |
| STAT | 201 | Elementary Statistical Inference | MATH | 1342 |
| STAT | 201 | Elementary Statistical Inference | MATH | 1442 |
| THAR | 101 | Intro. to Western Theatre | DRAM | 1310 |
| THAR | 110 | Acting I: Fundamentals | DRAM | 1351 |
| THAR | 115 | Voice and Articulation | SPCH | 1342 |
| THAR | 115 | Voice and Articulation | DRAM | 2336 |
| THAR | 135 | Technical Theatre | DRAM | 1330 |
| THAR | 210 | Acting II: Characterization | DRAM | 1352 |
| THAR | 250 | Theatrical Makeup | DRAM | 1341 |
| THAR | 255 | Costume Construction | DRAM | 1342 |
| THAR | 280 | History of the Theatre I | DRAM | 2361 |
| THAR | 281 | History of the Theatre II | DRAM | 2362 |
| THAR | 290 | Theatre Practicum | DRAM | 1120 |
| THAR | 290 | Theatre Practicum | DRAM | 1121 |
| THAR | 290 | Theatre Practicum | DRAM | 1220 |
| THAR | 290 | Theatre Practicum | DRAM | 1221 |
| THAR | 290 | Theatre Practicum | DRAM | 1320 |
| THAR | 290 | Theatre Practicum | DRAM | 1321 |
| THAR | 290 | Theatre Practicum | DRAM | 2120 |
| THAR | 290 | Theatre Practicum | DRAM | 2121 |
| THAR | 290 | Theatre Practicum | DRAM | 2220 |

* Must include a lab.

# *TRIAL SCHEDULE*

| MWF | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | TR |
|---|---|---|---|---|---|---|
| 8:00 | | | | | | 8:00 |
| 9:10 | | | | | | 9:35 |
| 10:20 | | | | | | |
| 11:30 | | | | | | 11:10 |
| 12:40 | | | | | | 12:45 |
| 1:50 | | | | | | |
| 3:00 | | | | | | 2:20 |
| 4:10 | | | | | | 3:55 |
| 5:45 | | | | | | |
| | | | | | | 5:30 |

# *TRIAL SCHEDULE*

| MWF | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | TR |
|---|---|---|---|---|---|---|
| 8:00 | | | | | | 8:00 |
| 9:10 | | | | | | 9:35 |
| 10:20 | | | | | | |
| 11:30 | | | | | | 11:10 |
| 12:40 | | | | | | 12:45 |
| 1:50 | | | | | | |
| 3:00 | | | | | | 2:20 |
| 4:10 | | | | | | 3:55 |
| 5:45 | | | | | | |
| | | | | | | 5:30 |