2017-2018

Bachelor of Science (BS) **Program of Study for**
Degree Code 118A **FERMENTATION SCIENCES**

I. GENERAL EDUCATION CURRICULUM 44

CHE 1101, 1110, 1102, 1120, and MAT 1110 will fulfill General Education requirements. Some other general education requirements may be double-counted in the major with departmental approval. Please see your advisor for information.

II. MAJOR REQUIREMENTS *(Not including 15 s.h. already counted in I, above)* **.....71-76**

2.0 major GPA is required for graduation. Major GPA calculation includes all courses in the major department, plus any other courses under II.

A. Fermentation Science (24-27 semester hours)

FER 1000_____(3) Principles of Fermentation Sciences
FER 2000_____(1) Social Implications of Fermented Beverages
FER 2100_____ (2) Reading & Writing in Fermentation Sciences
FER 3200_____ (3) Facility Design & Operation **[WID]** *(Pre: RC 2001)*
FER 4300 ____ (3) Sensory Analysis of Wine & Beer **[CAP]** *(Pre: FER 4100 or FER/CHE 4200, STT 2810)*

Choose four of the following:

FER 3000_____(4) Viticulture: Vine Physiology and Vineyard Establishment *(Pre: BIO 1801)*
FER 4140_____ (3) Principles of Wine Production *(Pre: CHE 1102 w/min grade C-; 2101/2102 or 2202/2204)*
FER 4150_____ (3) Winery Operations & Analysis *(Pre: BIO 3308; CHE 2210/2211; FER 4140)*
CHE/FER 4240 ____ (3) Principles of Brewing Science *Pre: CHE 1102 w/min grade C-; 2101/2102 or 2202/2204)*
CHE/FER 4250 ____ (3) Brewing Production & Analysis *(Pre: BIO 3308; CHE 2210/2211; CHE/FER 4240)*

B. Chemistry (19 semester hours) (*Grade of C- or higher required)

CHE 1101/1110 _____(4) Intro Chemistry I & Lab *(Pre: MAT 1020 or higher)*
CHE 1102*/1120____(4) Intro Chemistry II & Lab *(Pre: CHE 1101 & 1110; MAT 1020)*
CHE 2101/2102_____ (4) Fundamentals of Organic Chemistry & Lab *(Pre: CHE 1102 & 1120)*
CHE 2210/2211_____ (4) Quantitative Analysis *(Pre: CHE 1102 & 1120)*
CHE 4580 _____ (3) Biochemistry I *(Pre: BIO 1801; CHE 2101 or 2202 w/min grade C-; Sr. stdg)*

C. Biology (11 semester hours)

BIO 1801 _____ (4) Biological Concepts I *(Co: CHE 1101)*
BIO 3308 _____ (4) Microbiology *(Pre: CHE 1102 & 1120; BIO 1801; 2400/2600/2700)*
BIO 2600_____ (3) Cell Biology *(Pre: BIO 1801, CHE 1102)*

D. Mathematics and Economics (11 semester hours)

ECO 2030 _____ (3) Principles of Microeconomics
MAT 1110 _____(4) Calc with Analytic Geom I *(Pre: MAT 1025 w/min grade of C-)*
STT 3850_____ (4) Statistical Data Analysis I *(Pre: MAT 1110)*

E. Focus area courses (9-11 semester hours)

NUT 1202 _____ (3) Basic Food Science

Choose two of the following:

BIO 2400 ___ (3) Genetics *(Pre: BIO 1801)*
BIO 3800 ___ (4) Molecular Biology *(Pre: BIO 1801; 1 sem org chem; RC 2001)*
BIO 4555 ___ (4) Plant Physiology *(Pre: BIO 1801; CHE 1102/1120; Sr. stdg)*
BIO 4564 ___ (4) Microscopy *(Pre: BIO 1801; Sr. stdg)*
FER 3100 ___ (3) Biofuels & Bioprocessing *(Pre: BIO 1801; CHE 1101/1110)*
FER 4400 ___ (3) Distillation Technology *(Pre: FER 3100, 4140, or 4240)*
FER 3530-49___ (1-3) Selected Topics
SD 3100 ____ (3) Principles of Agroecology
SD 3150 ____ (4) Soil & Soil Fertility Management
SD 4200 ____ (4) Ecologically-Based Pest Mgmt *(Pre: SD 3100)*
PHY 1830____ (4) Physical Prin of Energy & Sustainability
TEC 3605____ (3) Sustainable Resrce Mgmt *(Pre: TEC 2029)*
TEC 3606____ (3) Sust Water & Wastewter Tech *(Pre: TEC 2029)*
TEC 4700____ (3) Biofuels Tech *(Pre: TEC 3638; Sr. stndg)*

F. Business courses (12 semester hours)

ACC 1050 _____(3) Survey of Accounting
BUS 1050 _____(3) Introduction to Business
MKT 3050 _____(3) Principles of Marketing *(Pre: ECO 2030; 54 earned hrs*

Choose one of the following:

HOS 2000_____(3) Survey of the Hospitality & Tourism Industry
ENT 3060_____(3) Opportunity & Entrepreneurship *(Pre: 54 earned hours)*
MGT 3010___(3) Survey of Mgmt *(Pre: 54 earned hours)*
ENG 3700 ___(3) Technical Writing **[WID-ENG]** (*Pre: RC 2001, 3090)*

III. MINOR (optional) Students are encouraged to pursue a minor in one of the following areas: Chemistry, Biology, Marketing, or Entrepreneurship.

IV. ELECTIVES (taken to total 122 hours for the degree) 2-7

2 semester hours of free electives must be outside the major discipline. **122**