

MASTER OF SCIENCE IN FOOD PROCESS ENGINEERING

Curriculum

Candidates are required to take a total of 32 credit hours, 18 of which are the required courses listed below, 6-8 credit hours in research and thesis, 6 credit hours must be taken from Department of Chemical and Biological Engineering courses, and the remaining 1-2 credit hours can be taken from FDSN electives, if needed.

| | | | |
|---|--|-----|-------|
| Core Courses | | | (18) |
| FDSN 505 | Food Microbiology | 3 | |
| FDSN 506 | Food Microbiology Laboratory | 3 | |
| FDSN 521 | Food Process Engineering | 3 | |
| FDSN 522 | Advanced Food Process Engineering | 3 | |
| FDSN 524 | Fundamentals of Food Science | 3 | |
| FDSN 541 | Principles of Food Packaging | 3 | |
| Thesis Research | | | (6-8) |
| FDSN 591 | Research and Thesis | 6-8 | |
| Elective Courses | | | (6) |
| Select a minimum of two courses from the following: | | | 6 |
| CHE 426 | Statistical Tools for Engineers | 3 | |
| CHE 439 | Numerical and Data Analysis | 3 | |
| CHE 494 | Process Design I | 3 | |
| CHE 560 | Statistical Quality and Process Control | 3 | |
| CHE 577 | Bioprocess Engineering | 3 | |
| ENVE 513 | Biotechnological Processes in Environmental Engineering | 3 | |
| ENVE 542 | Physiochemical Processes in Environmental Engineering | 3 | |
| FPE Electives | | | (1-2) |
| Select 1-2 credit hours from the following: | | | 1-2 |
| FDSN 501 | Nutrition, Metabolism, and Health | 3 | |
| FDSN 502 | Development, Delivery, and Dissemination | 3 | |
| FDSN 504 | Food Biotechnology | 3 | |
| FDSN 507 | Food Analysis | 3 | |
| FDSN 508 | Food Product Development | 3 | |
| FDSN 511 | Food Law and Regulations | 3 | |
| FDSN 520 | Low-Acid Canned Food Regulations and Microbiology ¹ | 3 | |
| FDSN 523 | Food Engineering Process Delivery ¹ | 3 | |
| FDSN 526 | Engineering Principles of Food ¹ | 3 | |
| FDSN 531 | HACCP Planning and Implementation | 3 | |
| FDSN 593 | Seminar on Food Safety and Technology | 1 | |
| FDSN 594 | Special Projects | 1-6 | |
| FDSN 597 | Special Problems | 1-6 | |

Minimum degree credits required: 32

¹ Courses are designed specifically for the Certificate in Food Processing Specialist program.

Research for the thesis must be carried out under the direct supervision of a participating faculty member. Based on the requirements of the research project, thesis committee members may be chosen from university faculty members from various departments, FdSN/FDA scientists, and the food industry scientists. The final thesis examination consists of submission of a written thesis, followed by an oral presentation open to all IFSH staff and the university community. A thesis may be completed outside the department only by special arrangement with the department chair. The final examination is normally oral, but may be written at the discretion of the thesis examining committee.

As a part of the thesis, the student is expected to contribute to one or more high quality peer-reviewed journal article(s). The student is also encouraged to present the research at a national professional society meeting.

2 *Master of Science in Food Process Engineering*

Students may enroll in a ChBE course that is not listed above, with FdSN adviser approval.