

RUTGERS FOOD SCIENCE 4+1 BS-MS CURRICULUM OF STUDY

Undergraduate Food Science major students have an opportunity to apply for admission into MS program in their junior year.

Students who are completing any option of study in Food Science can pursue the 4+1 BS-MS program: all students must satisfy the undergraduate course(s) requirements.

Refer to the Course Requirements in UG website for specific details.

Qualified students can begin graduate coursework before completion of bachelor's degree and earn both BS and MS degrees in five years.

- GPA requirement for application for 4+1 BS-MS Program of study in Food Science:
 - All students (incoming freshmen and transfer students) must have a GPA of 3.6 or above for Plan A and 3.3 or above for Plan B by the end of their Junior (3rd) year of UG study.
 - Plan A requires successful completion of research with Thesis.
 - Plan B requires successful completion all necessary coursework.

Students MUST note that 4+1 Plan A (Thesis) BS-MS degree may take longer than five years, as unexpected research problems may occur.

- Incoming freshmen applicants willing to pursue Plan A (Thesis) must successfully complete:
 - Food Chemistry Fundamentals (16:400:513) with a "B" or better grade during fall semester of their senior year
 - 6-9 credits of research in their UG program of study (Honors thesis, GH Cook etc.)
 - Transfer students must successfully complete:
 - Food Chemistry (11:400:411) with a "B" or better grade during the fall of their senior year.
 - 3 credits of Research-based Learning (11:400:493) with a "B" or better grade in their junior Spring semester (to pursue Plan A).

Decision for acceptance for students will be based on a positive recommendation by the Food Science Graduate Program admissions committee.

Course Requirements for MS portion of 4+1 program of study in Food Science

Total # of Credits: 30

	Plan A (Thesis)	Plan B (Coursework)
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Required Courses (11 cr)	1. Food Chemistry Fundamentals 16:400:513; 3 cr		
	2. Food Biology Fundamentals 16:400:514; 3 cr		
	3. Food Engineering Fundamentals 16:400:507; 4 cr		
	4. Seminar 16:400:601/602, sec 01; 1 cr		
Elective Course Credits	10	19	
Research Credits	9	None	
Required Document	Thesis	Critical Essay	
Examination	Defense of Thesis	Defense of Critical Essay	
Other information	May continue onto PhD program	Terminal Degree	
Course Sequence for 4+1 BS-MS program in Food Science for incoming freshmen			
Semester 1: 1 st year Fall			
	Course	Course #	Cr
1	Expository Writing (SEBS core-1 WC)	01:355:101	3
2	General Biology I (SEBS core-2 NS)	01:119:115	4
3	General Chemistry I (SEBS core-3 NS)	01:160:161	4
4	Calculus I (SEBS core- 4 QQ/QR)	01:640:135/151	4
5	Science of Food * OR SEBS Core course 5 (A & H)	11:400:103	3*
Total Semester Credits			18
Cumulative Credits			18
Semester 2: 1 st year Spring			
6	General Biology II	01:119:116	4
7	General Biology lab	01:119:117	2
8	General Chemistry II	01:160:162	4
9	Intro to Experimentation (General Chemistry lab)	01:160:171	1

10	Food and Health * OR SEBS Core course 5 (A & H)	11:400:104	3
Total Semester Credits			14
Cumulative Credits			32
*Choose either: Science of Food OR Food and Health. Only required to complete one.			
Semester 3: 2 nd year Fall			
11	Physics with lab	01:750:193/201, 203, 205)	4
12	Elementary Organic Chemistry	01:160:209	3
13	Elementary Organic Chemistry lab	01:160:211	1
14	Principles of Food Science	11:400:201	3
15	Principles of Food Science lab	11:400:202	2
16	SEBS Core 6 (WCD)		3
Total Semester Credits			16
Cumulative Credits			48
Semester 4: 2 nd year Spring			
17	Statistics	01:960:211	3
18	Food Analysis + Food Analysis lab	11:400:304+ 305	4
19	SEBS Core course 8 (SCL-Gov)		3
20	SEBS Core course 9 (SCL-Econ)		3
21	Elective- 1		3
Total Semester Credits			16
Cumulative Credits			64
Semester 5: 3 rd year Fall			
22	Introductory Biochemistry	11:115:301	3
23	Food Processing Technologies	11:400:301	4

24	SEBS Core course -10 (CC) or EBE		3
25	Food Chemistry + Food Chemistry lab	11:400:411+ 413	4
26	Elective- 2		3
Total Semester Credits			17
Cumulative Credits			81
Semester 6: 3 rd year Spring			
27	Food Microbiology	11:400:423	3
28	Food Microbiology lab	11:400:424	1
29	Current Issues in Food Science & Food Laws	11:400:314	2
30	Food Process Engineering	11:400:302	3
31	SEBS Core course -11 (CC) or EBE		3
32	Elective- 3		3
Total Semester Credits			15
Cumulative Credits			93
Semester 7: 4 th year Fall			
31	Sensory Evaluation of Foods	11:400:405	3
32	Food Chemistry Fundamentals	16:400:513	3
33	Food Physical Systems	11:400:419	3
34	Electives 4, 5		6
Total Semester Credits			15
Cumulative Credits			108
Semester 8: 4 th year Spring			
35	Food Product Development	11:400:412	3
36	Experience-based Education (Honors thesis/GH Cook) or SEBS core 11, 12 (CC)		6

37	Elective- 6		3
38	Food Biology Fundamentals	16:400:514	3
Total Semester Credits			15
Cumulative Credits			123
Semester 9: 5 th year Fall			
39	Master's level electives		6
40	Research (Plan A)/ Electives (Plan B)		3
41	Seminar**	16:400:601	1
42	Elective course 7/option related course		3
Total Semester Credits			13
Cumulative Credits			136
Semester 10: 5 th year Spring			
43	Food Engineering Fundamentals	16:400:507	4
44	Master's electives		4
45	Research (Plan A)/ Electives (Plan B)		6
Total Semester Credits			14
Cumulative Credits			150

** Can be taken in 5th year spring semester.

Courses in blue are Graduate-level courses.

Course Sequence for 4+1 BS-MS program in Food Science for transfer students			
<i>(The plan given here is for incoming students with 60 credits completed; any deficiencies in Science/Math courses must be completed by the student prior to application process for 4+1 program)</i>			
Semester 5: 3 rd year Fall			
1	Principles of Food Science	11:400:201	3
2	Principles of Food Science lab	11:400:202	2

3	Food Processing Technologies	11:400:301	4
4	Elective		3
5	Science of Food	11:400:104	3***
Total Semester Credits			12/15
Cumulative Credits			12-15
Semester 6: 3 rd year Spring			
6	Food Analysis +lab	11:400:304+ 305	4
7	Current Issues in Food Science & Food Laws	11:400:314	2
8	Food and Health	11:400:104	3***
9	Introductory Biochemistry	11:115:301	3
10	Food Process Engineering	11:400:302	3
11	Research-based Learning	11:400:493	3
***Choose either: Science of Food OR Food and Health. Only required to complete one.			
Total Semester Credits			16/19
Cumulative Credits			31
Semester 7: 4 th year Fall			
12	Sensory Evaluation of Foods	11:400:405	3
13	Food Chemistry + lab	11:400:411 + 413	4
14	Elective courses 2		6
15	Food Physical Systems	11:400:419	3
Total Semester Credits			16
Cumulative Credits			44
Semester 8: 4 th year Spring			
16	Food Product Development	11:400:412	3

17	Experience-based Education		3
18	Food Microbiology	11:400:423	3
19	Food Microbiology lab	11:400:424	1
20	Food Biology Fundamentals	16:400:514	3
21	Elective		3
Total Semester Credits			16
Cumulative Credits			60
Semester 9: 5 th year Fall			
22	Master's level electives		6
23	Electives (Plan B)/Research (Plan A)		3
24	Food Chemistry Fundamentals	16:400: 513	3
25	Special Topics (Critical Essay)	16:400:603	3
Total Semester Credits			15
Cumulative Credits			75
Semester 10: 5 th year Spring			
26	Food Engineering Fundamentals	16:400:507	4
27	Master's electives		4
28	Seminar	16:400:602	1
29	Electives (Plan B)/Research (Plan A)		6
Total Semester Credits			15
Cumulative Credits			90

Courses in blue are Graduate-level courses.