

**GRADUATE PROGRAMS AT THE DEPARTMENT OF  
FOOD ENGINEERING**

Master of Science and Doctor of Philosophy degrees are offered in the graduate program  
of  
Food Engineering

**GRADUATE CURRICULUM**

**M. S. in Food Engineering**

FDE 500	M.S. Thesis	NC
FDE 519	Transport Phenomena in Food Engineering	(3-0) 3
FDE 570	Research Methods and Ethics	NC
FDE 591	Seminar	NC
1 E course*		
5 elective courses		
Total minimum credits: 21		
Number of courses with credit (min): 7		

**Ph.D. in Food Engineering**

***If admitted by B.S. degree;***

FDE 519	Transport Phenomena in Food Engineering	(3-0) 3
FDE 570	Research Methods and Ethics	NC
FDE 691	Seminar for PhD Students	NC
FDE 600	PhD thesis	NC
1 E course*		
12 elective courses		
Total minimum credits: 42		
Number of courses with credit (min): 14		

***If admitted by M.S. degree;***

FDE 600	Ph.D. Thesis	NC
FDE 519	Transport Phenomena in Food Engineering**	(3-0) 3
FDE 570	Research Methods and Ethics***	NC
FDE 691	Seminar for PhD students	NC
1 E course*		
5 elective courses		
Total minimum credits: 21		
Number of courses with credit (min): 7		

\* ES501, ES502, ES504, ES507, ES509, ES510, CHE550, FDE561, AEE501, AEE502, ME510, ME521, ME540, IAM561, IAM562, MATH 587 or an equivalent course with consent of the department.

\*\* will be replaced by an elective course if taken in the M.S. program.

\*\*\* exempted, if taken in the M.S. Program

## GRADUATE COURSES

FDE 500	M.S. Thesis	NC	FDE 580	Food Packaging	(3-0) 3
FDE 510	Total Quality Management for the Food Industry	(3-0) 3	FDE 581	Biochemical Engineering	(3-0) 3
FDE 511	Non-Thermal Processing Technology in Food Industry	(3-0) 3	FDE 582	Thermal Process Engineering	(3-0) 3
FDE 515	Enzyme Engineering	(3-0) 3	FDE 585	Engineering Properties of Food	(3-0) 3
FDE 516	Magnetic Resonance in Food Science	(3-0) 3	FDE 587	Rheological Methods in Food Engineering	(3-0) 3
FDE 519	Transport Phenomena in Food Engineering	(3-0) 3	FDE 589	Microwave Processing of Foods	(3-0) 3
FDE 561	Food Engineering Analysis	(3-0) 3	FDE 591	Seminar	NC
FDE 571	Advanced Food Biochemistry	(3-0) 3	FDE 691	Seminar for PhD Students	NC
FDE 572	Advanced Food Microbiology	(3-0) 3	FDE 600	Ph.D. Thesis	NC
FDE 576	Industrial Microbiology	(3-0) 3	FDE 7XX	Special Topics in Food Engineering	(3-0) 3 or (2-2)3
FDE 579	Food Additives, Contaminants and Toxicology	(3-0) 3	FDE 8XX	Special Studies	(4-2) NC
			FDE 9XX	Advanced Studies	(4-0) NC