

**Degree: Master of Science**  
**Programme: Food Science and Technology**

**Curriculum**

**1 Program Courses**

Total credit required not less than 39

Credits

**2 Curriculum structure**

Coursework 21 credits

Required courses 9 credits

Elective courses 12 credits

Thesis 18 credits

**3 Courses Offered**

**3.1 Required courses 9 Credits**

2314665	Statistical Methods for Food Research	3(3-0-9)
2314672	Instrumentation Techniques in Food Research	3(2-3-7)
2314698	Individual Study I	1(0-0-4)
2314703	Seminar I	1(1-0-3)
2314704	Seminar II	1(1-0-3)

**3.2 Electives courses not less than**

12 Credits

2314565	Thermal Processing of Foods	2(2-0-6)
2314566	Food Chilling and Freezing	2(2-0-6)
2314568	Physical Properties of Foods	3(2-3-7)
2314572	Food Product Design	2(2-0-6)
2314573	Applied Food Microbiology	3(3-0-9)
2314574	Research and Development of Functional Foods	3(3-0-9)
2314576	Drying Technologies in Food Processing	2(2-0-6)
2314670	Food Phenolics	2(2-0-6)
2314671	Chemical and Physical Changes in Food	3(3-0-9)
2314673	Packaging of Food Products	3(3-0-9)
2314699	Individual Study II	1(0-0-4)

**3.3 Thesis 18 Credits**

2314813	Thesis	18 Credits
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#### 4 Study plan

##### First year semester 1

Course ID	Course Title	Credits
2314672	Instrumentation Techniques in Food Research	3
2314xxx	Electives	6
	Total	9

##### First year semester 2

Course ID	Course Title	Credits
2314665	Statistical Methods for Food Research	3
2314698	Individual Study I	1
2314xxx	Electives	6
	Total	10

##### Second year semester 1

Course ID	Course Title	Credits
2314703	Seminar I	1
2314813	Thesis	9
	Total	10

##### Second year semester 2

Course ID	Course Title	Credits
2314704	Seminar II	1
2314813	Thesis	9
	Total	10

Total 39

## 5 Course Description

Course ID	Course Description
2314501	<p>Basic Food Processing 3(3-0-9) BSC FOOD PROC</p> <p>Principles of food processing including: properties of raw material, handling, transportation and preparation of raw material; Various food process operations; containers; water supply and wastewater treatment</p>
2314502	<p>Basic Food Microbiology 3(3-0-9) BSC FOOD MICRO</p> <p>Relationships of microorganisms to foods; control of microorganisms in food process operation; food spoilage caused by microorganisms; foodborne pathogens and their toxins; important microorganisms in food production</p>
2314503	<p>Basic Food Chemistry 3(3-0-9) BSC FOOD CHEM</p> <p>Food compositions and their reactions in foods; structure and physicochemical properties of food commodities</p>
2314565	<p>Thermal Processing of Foods 2(2-0-6) THERMAL PRO FOODS</p> <p>Condition : Prerequisite 2314431 or Consent of faculty</p> <p>Use of heat in food processing including blanching, pasteurization, sterilization and aseptic processing</p>
2314566	<p>Food Chilling and Freezing 2(2-0-6) FOOD CHILL/FREEZ</p> <p>Condition : Prerequisite 2314431 or Consent of faculty</p> <p>Application of chilling and freezing to food system, effects of chilling, freezing and thawing on food qualities</p>
2314568	<p>Physical Properties of Foods 3(2-3-7) PHYS PROP FOODS</p> <p>Principles and measurement of various physical properties of foods that are important in handling, preparing, processing, packaging, storing and transportation of foods.</p>
2314572	<p>Food Product Design 2(2-0-6) FOOD PROD DESIGN</p> <p>Condition : Prerequisite 2301286, 2314431 or Consent of faculty</p> <p>Basic concepts of systematic food products and process, identification of modeling system, modeling and optimization for both food formulation and process</p>

<b>Course ID</b>	<b>Course Description</b>
2314573	<p>Applied Food Microbiology 3(3-0-9) APPL FOOD MICRO</p> <p>In-depth study the roles microorganisms play in food industrial and biotechnological processes; importance microorganisms in the safety and production of foods; current situation on food poisoning microorganisms and update methods of food poisoning/ food- borne disease investigation and control</p>
2314574	<p>Research and Development of Functional Foods 3(3-0-9) RES/DEV FUNCT FOOD</p> <p>Definitions and health benefits of nutraceuticals and functional foods; effect of food processing on stability of nutraceuticals; analysis of nutraceuticals; guidelines in development of new functional foods</p>
2314576	<p>Drying Technologies in Food Processing 2(2-0-6) DRY TECH FOOD PROC</p> <p>Key drying processes in food processing; their impacts on food properties and energy; strategies of selection appropriate drying technologies to individual product in terms of quality and energy saving</p>
2314665	<p>Statistical Methods for Food Research 3(3-0-9) STAT METH FOOD RES</p> <p>Condition : Prerequisite 2301286 or Consent of faculty</p> <p>Principles of food research in which statistics is used as a tool in material sampling, experiment design, sensory evaluation, data analysis and interpretation.</p>
2314670	<p>Food Phenolics 2(2-0-6) FOOD PHENOLICS</p> <p>Condition: Prerequisite 2314414 or Consent of faculty</p> <p>Structures of natural phenolic compounds; the biosynthesis and phenol chemistry; significance of phenolics especially in grapes and wines; analysis of phenolics.</p>
2314671	<p>Chemical and Physical Changes in Food 3(3-0-9) CHEM/PHYS CHG FOOD</p> <p>Condition: Prerequisite 2314314 or 2314371 or Consent of faculty</p> <p>Application of principles of chemistry and physics to a study of changes in water binding properties and activity, changes in proteins, nutrients, toxic constituents, and other compounds during storage, heating, freezing, dehydrating, and concentration of food materials.</p>
2314672	<p>Instrumentation Techniques in Food Research 3(2-3-7) INST TECH FOOD RES</p>

Course ID	Course Description
	Principles and use of research instruments in analyzing and measurement of chemical, physical, and microbiological properties of foods
2314673	Packaging of Food Products 3(3-0-9) PACK FOOD PROD Condition: Prerequisite 2314314 or 2314371 or Consent of faculty Food package systems and their relationship to specific products and processes, product composition problems, packaging-solution and shelf life of food
2314698	Individual Study I 1(0-0-4) INDIV STUD I Investigation on the topics of thesis work as guided by an advisor
2314699	Individual Study II 1(0-0-4) INDIV STUD II Investigation on the topics of thesis work as guided by an advisor
2314703	Seminar I 1(1-0-3) SEMINAR I An oral presentation of the research related to the thesis theme in which the student is interested and may be used as references for the thesis in the Master's degree program
2314704	Seminar II 1(1-0-3) SEMINAR II An oral presentation of the research done as part of the Master's degree thesis.