	<p style="text-align: center;"><b>MAHATMA GANDHI UNIVERSITY</b> Kottayam, Kerala</p> <p style="text-align: center;"><b>Undergraduate Programmes (HONOURS)</b> <b>2024 Admission Onwards</b></p>
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SYLLABUS					
SIGNATURE COURSE					
Name of the College	St. George's College, Aruvithura				
Faculty/ Discipline	Food Science and Quality Control				
Programme	BSc (Hons) Food Science and Quality Control				
Course Coordinator	Bins K Thomas				
Contributors					
Course Name	Essentials of Food Safety				
Type of Course	DSE				
Specialization title	Food Safety				
Course Code	MG3DSEFSQA01				
Course Level	200				
Course Summary	The course will enable the students to understand the fundamental aspects of food safety, including food poisoning, contamination control, and proper food storage and handling techniques.				
Semester	3	Credits			4
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others
		4	0		
Pre-requisites, if any					
					Total Hours
					60

#### Course Outcomes (CO)

Number of COs			4	
CO No.	Expected Course Outcome	Learning Domains *	PO No	
1	Define and explain food safety terms and concepts and classify high-risk and low-risk foods.	U	PO1, PO7, PO10	
2	Classify food poisonings and describe on foodborne diseases.	U	PO1, PO2, PO6, PO10	
3	Distinguish food hazards and summarize its preventions.	U	PO1, PO2, PO3, PO10	
4	Practice the correct and effective methods for cooking, storage and temperature control of foods.	A	PO1, PO2, PO6, PO10	

\*Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

#### CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	-	-	-	-	-	2	-	-	3

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 2	1	3	-	-	-	2	-	-	-	3
CO 3	2	3	2	-	-	-	-	-	-	3
CO 4	2	2	-	-	-	3	-	-	-	3

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

## Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	Introduction to food safety			
	1.1	Importance of food safety, Terms & Definitions	3	["1"]
	1.2	Introduction to Food Hygiene & Food Poisoning	3	["1"]
	1.3	High Risk Foods, Low Risk Foods, Ready to eat raw foods	3	["1"]
2	Food Poisoning			
	2.1	Food poisoning, Bacterial Food Poisoning and prevention	5	["2"]
	2.2	Chemical and metallic food poisoning	4	["2"]
	2.3	Foodborne diseases	4	["2"]
3	Food Contamination & Control			
	3.1	Microbiological Hazards & Prevention	4	["3"]
	3.2	Physical Hazards & Prevention	4	["3"]
	3.3	Chemical Hazards & Prevention	4	["3"]
	3.4	Allergenic hazards & Prevention	3	["3"]
4	The storage and temperature control of food.			
	4.1	Storage of raw foods, canned foods, Dry foods & perishable foods	5	["4"]
	4.2	Refrigerators- Controls	4	["4"]
	4.3	Cooking - Controls	5	["4"]
	4.4	Frozen Foods and Thawing- Controls	4	["4"]
	4.5	Cook Chill & Cook Freeze Methods	5	["4"]

<b>Teaching and Learning Approach</b>	<b>Classroom Procedure (Mode of transaction)</b> Classroom Procedure (Mode of transaction) Module 1 & 2-Lecturing, ICT Enabled Learning, Experiential learning, Participatory learning. Module 3- Tutorial, ICT Enabled Learning, Participatory learning. Module 4- Lecturing, Participatory learning.
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<b>Assessment Types</b>	<b>MODE OF ASSESSMENT</b> Mode of Assessment: Theory
	<b>A. Continuous Comprehensive Assessment (CCA)</b> • <b>Theory - 30 Marks</b> Assignment, Test paper, Industrial visit/ Demonstration, Case studies
	<b>B. End Semester Evaluation (ESE)</b> • <b>Theory - 70 Marks</b> Assessment Methods - Theory Duration of Examination - 2.00 Hrs Pattern of examination for Theory - Non-MCQ Different parts of written examination - Part - A , B , C Answer Type: ◦ PART - A ◦ One or two Sentences - (10 out of 12 ) - $10 \times 2 = 20$ ◦ PART - B ◦ Short answer - (6 out of 8 ) - $6 \times 5 = 30$ ◦ PART - C ◦ Essays - (2 out of 4 ) - $2 \times 10 = 20$

## References

- Hygiene for Management: A Text for Food Hygiene Courses by Richard Springer Principles of Food Sanitation by Norman G. Marriott , M. Wes Schilling , Robert B. Gravani

## Suggested Readings

- Codex Alimentarius guidelines for the validation of food safety control measures

## Affidavit

- We, St. George's College, Aruvithura and Bins K Thomas, retain the copyright of this syllabus and expressly prohibit its distribution in complete form to any institution outside our own.
- We, St. George's College, Aruvithura, agree to appoint a new course coordinator for the proposed Food Safety in the event of the unavailability of the currently nominated coordinator. This appointment will ensure the continued coordination of course delivery, assessments, and all related academic responsibilities necessary for the successful implementation of the specialization, for as long as the college offers this programme.
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## CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	-	-	-	-	-	2	-	-	3
CO 2	1	2	-	-	-	1	-	-	-	2
CO 3	2	3	3	-	-	-	-	-	-	3
CO 4	1	2	-	-	-	3	-	-	-	3

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

## Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	Prerequisite Programmes 1			
	1.1	Importance of prerequisite programmes.	3	["1"]
	1.2	Approved suppliers	3	["1"]
	1.3	Good design construction and layout of buildings and suitable facilities.	3	["1"]
2	Prerequisite Programmes 2			
	2.1	Equipment design and calibration	5	["2"]
	2.2	Managing the Supplies of air, water, energy and other utilities	4	["2"]
	2.3	Preventive maintenance & Good housekeeping	4	["2"]
3	Prerequisite Programmes 3			
	3.1	Management of purchased materials	4	["3"]
	3.2	Store management, stock rotation	4	["3"]
	3.3	Allergen management, Rework	4	["3"]
	3.4	Waste management	3	["3"]
4	Prerequisite Programmes 4			
	4.1	Personal hygiene & Competency	4	["4"]
	4.2	Cleaning and disinfection	4	["4"]
	4.3	Pest management	4	["4"]
	4.4	Labelling, Traceability and Recall	4	["4"]
	4.5	Contingency plans and Training	4	["4"]
	4.6	Food defence, biovigilance and bioterrorism	3	["4"]



<b>Teaching and Learning Approach</b>	<b>Classroom Procedure (Mode of transaction)</b> Classroom Procedure (Mode of transaction) Module 1 & 2-Lecturing, ICT Enabled Learning, Experiential learning, Participatory learning. Module 3- Tutorial, ICT Enabled Learning, Participatory learning. Module 4- Lecturing, Participatory learning.
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<b>Assessment Types</b>	<b>MODE OF ASSESSMENT</b> Mode of Assessment: Theory
	<b>A. Continuous Comprehensive Assessment (CCA)</b> • <b>Theory - 30 Marks</b> Assignment, Test papers, Industrial visit/ Demonstration, Case studies
	<b>B. End Semester Evaluation (ESE)</b> • <b>Theory - 70 Marks</b> Assessment Methods - Theory Duration of Examination - 2.00 Hrs Pattern of examination for Theory - Non-MCQ Different parts of written examination - Part - A , B , C Answer Type: <ul style="list-style-type: none"> <li>◦ PART - A</li> <li>◦ One or two Sentences - (10 out of 12 ) - <math>10 \times 2 = 20</math></li> <li>◦ PART - B</li> <li>◦ Short answer - (6 out of 8 ) - <math>6 \times 5 = 30</math></li> <li>◦ PART - C</li> <li>◦ Essays - (2 out of 4 ) - <math>2 \times 10 = 20</math></li> </ul>

## References


- Hygiene for Management: A Text for Food Hygiene Courses by Richard Springer Principles of Food Sanitation by Norman G. Marriott , M. Wes Schilling , Robert B. Gravani

## Suggested Readings

- Codex General Principles of food Hygiene ISO 22002

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SYLLABUS					
SIGNATURE COURSE					
Name of the College	St. George's College, Aruvithura				
Faculty/ Discipline	Food Science and Quality Control				
Programme	BSc (Hons) Food Science and Quality Control				
Course Coordinator	Bins K Thomas				
Contributors					
Course Name	Food Safety Legislations				
Type of Course	DSE				
Specialization title	Food Safety				
Course Code	MG5DSEFSQA01				
Course Level	300				
Course Summary	The course will provide a comprehensive overview of food safety legislation, covering both Indian and international laws, and sector-specific guidelines for various food businesses.				
Semester	5	Credits			4
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others
		4			
Pre-requisites, if any					
					Total Hours
					60

#### Course Outcomes (CO)

Number of COs			4
CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Understand the history and basics of food safety regulations.	U	PO3, PO6, PO7, PO10
2	Describe the Food Safety Standards Act and FSSAI	U	PO2, PO3, PO6, PO10
3	Interpret FSSA Schedule 4 and explain the general hygienic and sanitary practices for food business operators, including: Petty food operators and street food vendors Manufacturing, processing, packaging, storage, and distribution for foods. Milk and milk products Slaughterhouses and meat processing Catering	A	PO2, PO3, PO6, PO7, PO10
4	Write on International Food Regulations.	A	PO3, PO6, PO7, PO9, PO10

\*Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

## CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	-	-	2	-	-	2	1	-	-	2
CO 2	-	2	2	-	-	2	-	-	-	2
CO 3	-	3	3	-	-	3	2	-	-	2
CO 4	-	-	3	-	-	3	2	-	1	3

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

## Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	Introduction to food safety regulations			
	1.1	Introduction to food safety legislations	3	["1"]
	1.2	Historical context and evolution of food safety laws	3	["1"]
	1.3	Food safety enforcement agencies and their roles	3	["1"]
2	Food Safety Standards Act (FSSA)			
	2.1	Food Safety Standards Act	5	["2"]
	2.2	Food safety regulations	4	["2"]
	2.3	FSSAI	4	["2"]
3	FSSA Schedule 4			
	3.1	Part -1 General hygienic and sanitary practices to be followed by food business operators applying for registration - Petty food operators and Street food vendors	4	["3"]
	3.2	Part II - General hygienic and sanitary practices to be followed by food business operators applying for license- Manufacturing/ processing/ packaging/storage/distribution	4	["3"]
	3.3	Part III - General hygienic and sanitary practices to be followed by food business operators applying for license- Milk and milk products	4	["3"]
	3.4	Part IV - General hygienic and sanitary practices to be followed by food business operators applying for license- Slaughter house and meat processing	3	["3"]
	3.5	Part V - General hygienic and sanitary practices to be followed by food business operators applying for license- Catering	5	["3"]
4	International Food Regulations			
	4.1	USFDA, Federal Food Drug and Cosmetics Act, Food Safety Modernization Act.	4	["4"]
	4.2	Codex Alimentarius Commission	5	["4"]
	4.3	Safe Food for Canadians Act	4	["4"]
	4.4	Food Standards Australia New Zealand Act	5	["4"]



<b>Teaching and Learning Approach</b>	<b>Classroom Procedure (Mode of transaction)</b> Classroom Procedure (Mode of transaction) Module 1 & 2-Lecturing, ICT Enabled Learning, Experiential learning, Participatory learning. Module 3- Tutorial, ICT Enabled Learning, Participatory learning. Module 4- Lecturing, Participatory learning.
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<b>Assessment Types</b>	<b>MODE OF ASSESSMENT</b> Mode of Assessment: Theory
	<b>A. Continuous Comprehensive Assessment (CCA)</b> • <b>Theory - 30 Marks</b> Assignments, Test paper, Case study, Industrial visit/ Demonstration
	<b>B. End Semester Evaluation (ESE)</b> • <b>Theory - 70 Marks</b> Assessment Methods - Theory Duration of Examination - 2.00 Hrs Pattern of examination for Theory - Non-MCQ Different parts of written examination - Part - A , B , C Answer Type: <ul style="list-style-type: none"> <li>◦ PART - A</li> <li>◦ One or two Sentences - (10 out of 12 ) - <math>10 \times 2 = 20</math></li> <li>◦ PART - B</li> <li>◦ Short answer - (6 out of 8 ) - <math>6 \times 5 = 30</math></li> <li>◦ PART - C</li> <li>◦ Essays - (2 out of 4 ) - <math>2 \times 10 = 20</math></li> </ul>

## References


- FSSAI STANDARDS AND REGULATIONS International Food Regulations

## Suggested Readings

- Codex Guidelines

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SYLLABUS						
SIGNATURE COURSE						
<b>Name of the College</b>	St. George's College, Aruvithura					
<b>Faculty/ Discipline</b>	Food Science and Quality Control					
<b>Programme</b>	BSc (Hons) Food Science and Quality Control					
<b>Course Coordinator</b>	Bins K Thomas					
<b>Contributors</b>						
<b>Course Name</b>	Food Safety Audits					
<b>Type of Course</b>	DSE					
<b>Specialization title</b>	Food Safety					
<b>Course Code</b>	MG6DSEFSQA01					
<b>Course Level</b>	300					
<b>Course Summary</b>	The course will provide a comprehensive overview of the prerequisite programs necessary for ensuring food safety, covering aspects such as facility design, equipment management, material handling, and operational hygiene.					
<b>Semester</b>	6	<b>Credits</b>			4	<b>Total Hours</b>
<b>Course Details</b>	<b>Learning Approach</b>	Lecture	Tutorial	Practical	Others	
		3		1		75
<b>Pre-requisites, if any</b>						

#### Course Outcomes (CO)

Number of COs		4	
CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Understand the importance and basics of documentation and management skills.	U	PO1, PO2, PO3, PO4, PO5
2	Classify and explain different food safety audits.	U	PO1, PO2, PO3
3	Prepare and produce documents and reports for internal audit, MRM, non-conformity, corrective and preventive actions.	A	PO1, PO2, PO3, PO4
4	Practice audit protocols and onsite audits and prepare checklists, documents and reports.	A	PO1, PO2, PO3, PO4, PO5

\*Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

#### CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	3	2	2	-	-	-	-	-
CO 2	3	3	1	-	-	-	-	-	-	-
CO 3	3	3	2	2	-	-	-	-	-	-
CO 4	3	3	2	2	2	-	-	-	-	-

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

## Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	Food Safety			
	1.1	Importance of management systems	4	["1"]
	1.2	Level of documentation	4	["1"]
	1.3	Essential management skills & failures of management	4	["1"]
2	Types of Food Safety Audits			
	2.1	Introduction to audits	6	["2"]
	2.2	I st , II nd & III rd party audits	5	["2"]
	2.3	Enforcement audits	5	["2"]
3	Audit Documentation			
	3.1	Internal audit documentation	5	["3"]
	3.2	MRM Documentation	4	["3"]
	3.3	Non conformity report	4	["3"]
	3.4	Corrective and preventive action reports	4	["3"]
4	Practicum			
	4.1	Audit protocol	7	["4"]
	4.2	PRP Audits	7	["4"]
	4.3	Internal Audits	7	["4"]
	4.4	Onsite audits	9	["4"]

<b>Teaching and Learning Approach</b>	<b>Classroom Procedure (Mode of transaction)</b> Classroom Procedure (Mode of transaction) Module 1& 2-Lecturing, ICT Enabled Learning, Experiential learning, Participatory learning. Module 3- Tutorial, ICT Enabled Learning, Participatory learning. Module 4- Practicum
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<b>Assessment Types</b>	<b>MODE OF ASSESSMENT</b> Mode of Assessment: Both
	<b>A. Continuous Comprehensive Assessment (CCA)</b> <ul style="list-style-type: none"> <li>• <b>Theory - 25 Marks</b> Assignment / Viva / Seminar</li> <li>• <b>Practical - 15 Marks</b> Viva / Skill/ knowledge</li> </ul>
	<b>B. End Semester Evaluation (ESE)</b> <ul style="list-style-type: none"> <li>• <b>Theory - 50 Marks</b> Assessment Methods – Theory Duration of Examination – 1.50 Hrs Pattern of examination for Theory – Non-MCQ Different parts of written examination – Part - A , B , C Answer Type: <ul style="list-style-type: none"> <li>◦ PART - A</li> <li>◦ One Sentence - (10 out of 12 ) – <math>10 \times 1 = 10</math></li> <li>◦ PART - B</li> <li>◦ Short answer - (4 out of 6 ) – <math>4 \times 5 = 20</math></li> <li>◦ PART - C</li> <li>◦ Essays - (2 out of 4 ) – <math>2 \times 10 = 20</math></li> </ul> </li> <li>• <b>Practical - 35 Marks</b> Assessment Methods – Report-5, Viva -5, Written Test-10, Mock Audit Report - 15 Duration of Examination – 3.00 Hrs</li> </ul>

## References

- Hygiene for Management: A Text for Food Hygiene Courses by Richard Springer Principles of Food Sanitation by Norman G. Marriott , M. Wes Schilling , Robert B. Gravani

## Suggested Readings

- BRS Standards and audit documents FSSC standards and audit documents

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