AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

Department of Food Processing Technology

B.Tech – Food Processing Technology

Syllabus for 2021-2022

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

ACADEMY OF MARITIME EDUCATION AND TRAINING

DEPARTMENT OF FOOD PROCESSING TECHNOLOGY

1. The Vision and Mission of AMET

Vision of the Institute

To sustain identity as a World Class Leader in Maritime Education and empower learners with wholesome knowledge through progressive innovation in training, research and development which will render students a unique learning experience and a transformation impact on the Global Society.

Mission of the Institute

AMET will strive continuously to

1. Impart value-based higher education and technical knowledge with uncompromising strides of an outstanding quality.
2. Emerge as a Centre of Excellence inculcating skill development in recent technologies in accordance with industrial trends.
3. Create World class research capabilities on par with the finest in the world and broaden student's horizons beyond classroom education.
4. Nurture talent and entrepreneurship and enable all round personality development in students.
5. Empower students from across socio economic strata.
6. Make a positive difference to society through technical education.

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

The Vision and Mission of the Department of Food Processing Technology

Vision of the Department

To become a Centre of excellence in Food Technology Education and Research, through the development of highly competent and Dynamic Food Technologist, for serving the society.

Mission of the Department

The Vision of the Department is accomplished by the following mission statements

1. To inculcate in-depth knowledge of Food Engineering and Technology with an ability to analyze, evaluate, design, discriminate, interpret, create and integrate existing and new knowledge.
2. To analyze technological problems and judge independently to create information for conducting research and think to conceptualize in the area of Food Engineering and Technology.
3. To develop strong research aptitude through research work to enable the students to opt for higher levels of learning in the field of Food Engineering and Technology.
4. To inculcate capabilities of students to analyze a problem, identify, formulate and solve technical problems using basic fundamental principles of food process engineering approach.
5. To acquaint and equip students with professional and intellectual integrity, ethics of research and scholarship and responsibilities to contribute positively in the sustainable development of society.
6. To enable the students to get engaged in lifelong learning independently with the vigor and zeal and become capable to start-up their own businesses.

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs) OF B.TECH FOOD PROCESSING TECHNOLOGY

PEO1:

Be efficient Food analysts with quality knowledge and essential skills as per the industry needs.

PEO2:

To provide the strong foundation in the areas of food engineering, post-harvest practices and value addition of food materials.

PEO3:

Graduates of the program must be able to competently work with professionals of related fields over the wide spectrum of practice in areas of processing and food engineering, post-harvest technology and value addition

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO	Statement
I	Apply the knowledge of Food Technology, investigate and solve the complex in food processing and nutrition to meet the specified needs with appropriate considerations for the society
II	Develop solutions for complex Engineering problems in the broad field of Food Engineering.
III	Analyze, design and integrate knowledge of Food processing techniques in food industries and create passion for life-long learning and research in advanced fields.

Programme Outcomes (PO's)

POs	Description
PO1	Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex technical problems
PO2	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusion using first principles of mathematics, natural science and engineering science
PO3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and the cultural, societal and environmental considerations
PO4	Use research –based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusion
PO5	Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activates with an understanding of the limitations
PO6	Apply reasoning informed by the contextual knowledge to asses societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development
PO7	Understand the impact of the professional ethics and responsibilities and norms of the engineering practice.
PO8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practices
PO9	Function effectively as an individual, and a member or leader in diverse teams, and in multidisciplinary setting
PO10	Communicate effectively on complex engineering activites with the engineering community and with society at large, such as being able to comprehend and write reports effectively and design documentation , make effective presentations and give and received clear instructions.
PO11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

Curriculum - 2021-2022

SEMESTER I

COMMON TO ALL BRANCHES OF UG ENGINEERING & TECHNOLOGY

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UELECO1	Humanities and Social Science including Management Courses	Technical English	2	2	0	0	2
2.	UEPHC01	Basic Science Course	Engineering Physics I	3	3	0	0	3
3.	UEMTC01	Basic Science Course	Engineering Mathematics I	4	3	1	0	4
4.	UEEEC01	Engineering Science Course	Basic Electrical Engineering	4	3	1	0	4
5	UEMDCO1	Mandatory Course-1	Universal Human Values Induction program	3 weeks	-	-	-	-
PRACTICAL								
6	UELECPA	Humanities and Social Science including Management Courses	Communication skill Laboratory I	2	0	0	4	1
7	UEEECPA	Engineering Science Course	Basic Electrical Engineering Laboratory	2	0	0	2	1
8	UEWSCPA	Engineering Science Course	Work Shop Practices	4	0	0	4	2
9	UEMCCPA	Engineering Science Course	Engineering Graphics and design	5	1	0	4	3
TOTAL				**26**	**12**	**2**	**12**	**20**

L- Lecture; T-Tutorial; P-Practical; C-Credit

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

SEMESTER II

COMMON TO ALL BRANCHES OF UG ENGINEERING & TECHNOLOGY

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1	UECHCO1	Basic Science Course	Engineering Chemistry	4	4	0	0	4
2	UEPHCO2	Basic Science Course	Engineering Physics II	2	2	0	0	2
3	UEMTC02	Basic Science Course	Engineering Mathematics II	4	3	1	0	4
4	UEITC01	Engineering Science Course	Python for Problem Solving	3	3	0	0	3
5	UEMDCO2	Mandatory Course 2	Environmental Science	2	2	0	0	0
6	UEMDC03	Mandatory Course 3	Gender Sensitivity	2	2	0	0	0
PRACTICAL								
7	UELECPB	Humanities and Social Science including Management Courses	Communication Skills lab - II	2	0	0	2	1
8	UECHCPA	Basic Science Course	Engineering Chemistry Laboratory	2	0	0	2	1
9	UEPHCPA	Basic Science Course	Engineering Physics Laboratory	2	0	0	2	1
10	UE1ITCPA	Engineering Science Course	Python for problem solving lab	2	0	0	2	1
TOTAL				**25**	**14**	**1**	**8**	**17**

AMET

ACADEMY OF MARITIME EDUCATION AND TRAINING

DEEMED TO BE UNIVERSITY

(Under Section 3 of UGC Act 1956)

SEMESTER III

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UEMTCO3	Basic Science Course	Engineering Mathematics III	4	3	1	0	4
2.	UEMCC01	Engineering Science Course	Engineering Mechanics	3	3	0	0	3
3.	UEFP301	Professional Core Course 1	Food and Nutrition	3	3	0	0	3
4.	UEFP302	Professional Core Course 2	Food microbiology	3	3	0	0	3
5.	UEFP303	Professional Core Course 3	Food Chemistry	3	3	0	0	3
6	UEEE305	Engineering Science Course	Basic Electronics Engineering	3	3	0	0	3
7	UEMDC04	Mandatory Course 4	Constitution of India	0	0	0	0	2
8	UEVCC01	Employment Opportunity Course	Value Added Training Program-1	0	0	0	0	0
9	UEVCC02	Industrial Visit	Industrial Visit - I	0	0	0	0	0
PRACTICAL								
10	UELECPC	Humanities and Social Science including Management Courses	Interpersonal Communication	2	0	0	2	1
11	UEFP3PA	Professional Lab Course 1	Food Microbiology Lab	2	0	0	2	1
12	UEFP3PB	Professional Lab Course 2	Food Chemistry Lab	2	0	0	2	1
13	UEEE3PC	Engineering Science Course	Electrical workshop practices	2	1	0	2	1
14	UEFP3PD	Internship	Internship – 1	0	0	0	0	1
TOTAL				**27**	**18**	**1**	**8**	**26**

SEMESTER IV

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UEMTCO4	Basic Science Course	Mathematical foundation for Data science and AI	2	2	0	0	2
1.	UEFP401	Professional Core Course 4	Unit operation in food processing	4	3	1	0	4
2.	UEFP402	Professional Core Course 5	Food Additives	3	3	0	0	3
3.	UEFP403	Professional Core Course 6	Instrumentation and Techniques in Food analysis	4	3	1	0	4
4.	UEMCC02	Engineering Science Course	Thermodynamics	3	3	0	0	3
5	UEMDC06	Humanities and Social Science including Management Courses	Ethics and Values	3	3	0	0	3
6		Open Elective Course 1	OEC 1	3	3	0	0	3
7	UEVCC03	Employment Opportunity Course	Value Added Training Program-II	0	0	0	0	0
8	UEVCC04	Industrial Visit	Industrial Visit – II	0	0	0	0	0
9	UEMDCO5	Mandatory Course 4	Essence of Indian Traditional Knowledge	2	2	0	0	0
PRACTICAL								
10	UELECPD	Humanities and Social Science including Management Courses	Professional communication	2	0	0	2	1
11	UEFP4PA	Professional Lab Course 3	Unit operation in food processing Lab	2	0	0	2	1
12	UEFP4PB	Professional Lab Course 4	Inplant training in Food Industry (One Month)	2	0	0	2	1
			TOTAL	**30**	**20**	**2**	**6**	**25**

SEMESTER V

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UEFP501	Basic Science Course	Research Methodology	2	2	0	0	2
2.	UEFP502	Professional Core Course 7	Food Production and Agriculture	3	3	1	0	3
3.		Professional Elective Course 1	PEC1	3	3	0	0	3
4.		Engineering Science Course	Data Science	4	3	1	0	3
5		Open Elective Course 2	OEC 2	3	3	0	0	3
6	UEMDCO6	Mandatory Course 5	Universal Human Values	3	3	0	0	3
7	UEVCC05	Employment Opportunity Course	Value Added Training Program-III	-	-	-	-	-
8	UEVCC06	Industrial Visit	Industrial Visit III	-	-	-	-	-
PRACTICAL								
9	UEFP5PA	Professional Lab Course 5	Food Analysis Lab	2	0	0	2	1
10	UEFP5PB	Internship	Internship – 1	0	0	0	0	1
			TOTAL	**25**	**19**	**1**	**2**	**19**

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

SEMESTER VI

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UEFP601	Professional Core Course 9	Bioethics and IPR	4	3	1	0	4
2.	UEFP602	Professional Core Course 10	Extra Disciplinary Course – Food Processing	4	3	1	0	4
3	UEFP603	Professional Core Course 11	Food Marketing	3	3	0	0	3
4		Professional Elective Course 3	PEC 3	3	3	0	0	3
5		Engineering Science Course	Artificial Intelligence	3	3	0	0	3
6		Open Elective Course 3	OEC 3	3	3	0	0	3
7	UEVCC7	Employment Opportunity Course	Finishing School Training I	0	0	0	0	0
8	UEVCC8	Employment Opportunity Course	Value Added Training Program –IV	-	-	-	-	-
9	UEVCC9	Industrial Visit	Industrial Visit – IV	-	-	-	-	-
PRACTICAL								
10	UEFP6PA	Professional Lab Course 6	Food Processing Lab	2	0	0	2	1
11	UEFP6PB	Professional Lab Course 7	Dairy Processing Laboratory	2	0	0	2	1
12	UEFP6PC	Project	Inplant Training in Food Industry (One Month)	4	0	0	4	2
	TOTAL			**28**	**17**	**2**	**8**	**24**

SEMESTER VII

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1.	UEFP701	Professional Core Course 12	Food Product Development and Entrepreneurship	4	3	1	0	4
2.	UEFP702	Professional Core Course 13	Bakery and Confectionery Technology	4	3	0	0	4
3.		Open Elective Course 4	OEC 4	3	3	0	0	3
4.		Professional Elective Course 4	PEC 4	3	3	0	0	3
5.		Professional Elective Course 4	PEC 5	3	3	0	0	3
6.	UEFP703	Professional Core Course 13	Food Packaging Technology	3	3	0	0	3
7.	UEVCC10	Employment Opportunity Course	Finishing School Training II	0	0	0	0	0
8.	UEVCC11	Employment Opportunity Course	Value added Training Program-V	-	-	-	-	-
9.	UEVCC12	Industrial Visit	Industrial Visit – V	-	-	-	-	-
PRACTICAL								
10.	UEFP7PA	Project	Rural Linkage to Village	2	0	0	2	1
11.	UEFP7PB	Project	Project Work - Phase 1	6	0	0	6	3
TOTAL				**25**	**15**	**1**	**8**	**24**

SEMESTER VIII

S. No	Course Code	Category	Course Title	Contact Hours	L	T	P	C
THEORY								
1	UEVCC13	Industrial Visit	Industrial Visit – VI	0	0	0	0	0
PRACTICAL								
2	UEFP8PA	Project	Industrial Training	16	0	0	16	8
	TOTAL			**22**	**6**	**0**	**16**	**8**

List of professional elective courses (PEC) offered by the Department

Sl. No.	Course Code	Title of the PEC	Contact Hours	L	T	P	C
		PEC1					
1	UEFPE01	Fruits and Vegetables Processing Technology	3	3	0	0	3
2	UEFPE02	Alcoholic Beverage Technology	3	3	0	0	3
3	UEFPE03	Non-fermented Beverage Technology	3	3	0	0	3
4	UEFPE04	Agricultural Processing	3	3	0	0	3
5	UEFPE05	SWAYAM/MOOC Course	3	3	0	0	3
		PEC2					
1	UEFPE06	Meat and Poultry Processing Technology	3	3	0	0	3
2	UEFPE07	Non thermal Preservation of Foods	3	3	0	0	3
3	UEFPP08	Sugar Technology	3	3	0	0	3
4	UEFPP09	Millet Processing Technology	3	3	0	0	3
5	UEFPE10	SWAYAM/MOOC Course	3	3	0	0	3
		PEC3					
1	UEFPE11	Engineering Properties of Food	3	3	0	0	3
2	UEFPE12	Flavors Technology	3	3	0	0	3
3	UEFPE13	Food Fermentation Technology	3	3	0	0	3
4	UEFPE14	Ready to Eat Food Processing Technology	3	3	0	0	3
5	UEFPE15	SWAYAM/MOOC Course	3	3	0	0	3
		PEC4					
1	UEFPE16	Food safety and hygiene	3	3	0	0	3
2	UEFPE17	Total Quality Management in Food Industries	3	3	0	0	3
3	UEFPE18	Food industry waste management	3	3	0	0	3
4	UEFPE19	Food Quality Control & Assurance	3	3	0	0	3
5	UEFPE20	SWAYAM/MOOC Course	3	3	0	0	3
		PEC5					
1	UEFPE21	Food plant design and layout	3	3	0	0	3
2	UEFPE22	Cold chain management	3	3	0	0	3
3	UEFPE22	Biostatistics	3	3	0	0	3
4	UEFPE23	Sensory analysis of foods	3	3	0	0	3
5	UEFPE24	SWAYAM/MOOC Course	3	3	0	0	3
		PEC 6					
1	UEFPE25	Traditional Foods and Processing Technologies	3	3	0	0	3
2	UEFPE26	Nutraceuticals and functional foods	3	3	0	0	3
3	UEFPE27	Nano technology applications in food processing	3	3	0	0	3
4	UEFPE28	Food biotechnology	3	3	0	0	3
5	UEFPE29	SWAYAM/MOOC Course	3	3	0	0	3

List of open elective courses (OEC) offered by FPT Department

IV Semester

Sl.No.	Course Code	Title of the OEC1	Contact Hours	L	T	P	C
1.	UEFPO01	Jam, Jelly, pickles and beverages processing Technology	3	3	0	0	3
2.	UEFPO02	Food and Diet for Seafarers	3	3	0	0	3
3.	UEFPO03	Milk and Milk products Technology	3	3	0	0	3
4.	UEFPO12	Fundamental of food and nutrition	3	3	0	0	3
5.	UEFPO13	Indian Traditional Foods	3	3	0	0	3

V Semester

Sl.No.	Course Code	Title of the OEC2	Contact Hours	L	T	P	C
1.	UEFPO04	Alcoholic Beverage Technology	3	3	0	0	3
2.	UEFPO05	Meat and poultry processing	3	3	0	0	3
3.	UEFPO06	Marine food products processing	3	3	0	0	3

VI Semester

Sl.No.	Course Code	Title of the OEC3	Contact Hours	L	T	P	C
1.	UEFPO07	Bakery products technology	3	3	0	0	3
2.	UEFPO08	Ready to Eat Food Processing Technology	3	3	0	0	3
3.	UEFPO09	Sensory analysis of foods	3	3	0	0	3
4.	UEFPO14	Food and Diet for Sea Farers	3	3	0	0	3
5.	UEFPO15	Introduction to fruits and vegetables	3	3	0	0	3

VII Semester

Sl.No.	Course Code	Title of the OEC3	Contact Hours	L	T	P	C
1.	UEFPO10	Total Quality Management in Food Industries	3	3	0	0	3
2.	UEFPO11	Cold chain management	3	3	0	0	3
3.	UEFPO16	Consumer prospective on Food Safety and Standard laws	3	3	0	0	3

AMET
ACADEMY OF MARITIME EDUCATION AND TRAINING
DEEMED TO BE UNIVERSITY
(Under Section 3 of UGC Act 1956)

COMMON FRAMEWORK FOR CURRICULUM DEVELOPMENT

S. No.	Category	Suggested Breakup of Credits(Total 160)
1	Humanities and Social Sciences including Management courses	12*
2	Basic Science courses	25*
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	24*
4	Professional core courses	48*
5	Professional Elective courses relevant to chosen specialization/branch	18*
6	Open subjects – Electives from other technical and /or emerging subjects	18*
7	Project work, seminar and internship in industry or elsewhere	15*
8	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)
	Total	160*

**Minor variation is allowed as per need of the respective disciplines.*

Semester	Contact Hours	Lecture	Tutorial	Practical	Credits
Semester 1	26	12	2	12	20
Semester 2	23	14	1	8	17
Semester 3	27	18	1	8	23
Semester 4	27	18	2	6	26
Semester 5	24	19	1	4	19
Semester 6	27	17	2	8	24
Semester 7	25	15	1	8	24
Semester 8	22	6	0	16	8
Total	201	119	10	70	163

AMET CURRICULUM –CREDIT SHARE

Humanities	Basic Science	Engineering Science	Professional Core	Professional Elective	Open Elective	Project /Internship	Total
12	25	29	52	18	12	15	163