

**VIGNAN'S****DEPARTMENT OF FOOD TECHNOLOGY****CIRCULAR**

Date: 10-11-2025

The Department of Food Technology is going to conduct a Board of Studies (BoS) meeting for B. Tech-Food Technology on **13-11-2025** from 02.00 PM online mode. Members who will be joining virtually may use the link below to attend the meeting.

Join Zoom Meeting

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODV%0DEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread_v2/0?context=%7b%22id%22%3a%223b0993d8-31db-4db6-b617-64ac193c7ace%22%2c%22oid%22%3a%226cf5ee25-8b0d-49e3-8d97-74422aa66566%22%7d

Meeting ID: 467 778 102 656

Passcode: qF6Bo9fn

All the members are requested to make it convenient to attend the meeting.

The members are

1.	Dr. T. Ramesh Babu	Chairperson
2.	Dr. Ch. V.V. Satyanarayana	External Member (Academic)
3.	Dr. P. Srinivasa Rao	External Invited Member (Academic)
4.	Dr. Chetan C J	External Invited Member (Industry)
5.	Dr. S. Karthikeyan	Invited Member (Nominee of the school dean)
6.	Dr. Syed Irshaan	Invited Member (Nominee of the dean R & D)
7.	Dr. Sanker swan Singh	Internal Member (Associate Professor)
8.	Dr. Mrinmoy Roy	Internal Member (Assistant Professor)
9.	Mr. N. Abhilash	Internal Member (Assistant Professor)
10.	Mr. Sumit Gawai	Internal Member (Assistant Professor)
11.	Dr. Sangeetha K	Member Secretary

Agenda of the BoS Meeting:

1. To Discuss and finalize the curriculum structure and credits distribution of B.Tech., Food Technology Programme for the regulation 2025 (R25-C25).
2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B.Tech., Food Technology Programme for the regulation R25-C25.
3. To approve the R25-C25 curriculum, syllabus and assessment schemes of B.Tech., Food Technology Programme and recommend to the Academic council.
4. To Discuss about the SDG and IKS components in the syllabus.
5. To Review and Approve the Action Taken Report (ATR) on the Suggestions Given in Earlier BoS Meetings

G. Sangeetha
Member Secretary

Narayan
Chairperson

Date: 13-11-2025

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B. Tech Food Technology program was conducted on 13.11.2025 in online from 02.00 PM to 3.00 PM. All the members joined the meeting virtually through the following link:

Join Zoom Meeting

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODV%0DFwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%22%3a%223b0993d8-31db-4db6-b617-64ac193c7ace%22%2c%22Oid%22%3a%226cf5ee25-8b0d-49e3-8d97-74422a66566%22%7d

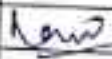
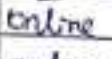
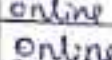
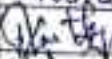
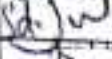
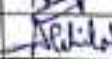
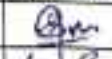
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2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B.Tech., Food Technology Programme for the regulation R25-C25.
3. To approve the R25-C25 curriculum, syllabus and assessment schemes of B.Tech., Food Technology Programme and recommend to the Academic council.
4. To Discuss about the SDG and IKS components in the syllabus.
5. To Discuss the initiation of PG Diploma in industry-based courses
6. To Review and Approve the Action Taken Report (ATR) on the Suggestions Given in Earlier BoS Meetings

The following members were present through hybrid mode.

S. No.	Name and Designation of the Member	Position	Signature
1.	Dr. T. Ramesh Babu	Chairperson	
2.	Dr.Ch.V.V. Satyanarayana	External Member (Academic)	
3.	Dr. P. Srinivasa Rao	External Invited Member (Academic)	
4.	Dr. Chetan C J	External Invited Member (Industry)	
5.	Dr. S. Karthikeyan	Invited Member (Nominee of the school dean)	
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10.	Mr. Sumit Gawai	Internal Member (Assistant Professor)	
11.	Dr. Sangeetha K	Member Secretary	

Chairperson Dr. T. Ramesh Babu, Dean, School of Agriculture and Food Technology, VVSTR initiated the meeting by welcoming and introducing the external members and invitees to the internal members. Chairperson presented the NEP 2020 Compliant Regulation - R25-C25 which emphasis on creating *learning centric* (continuous learning and continuous assessment model), offering M. Tech., M. Tech. with Honours / Research Honours / Minor / Add-on Diploma, providing lateral entry and honorable exit.

The following points were discussed in the BoS meeting:

1. Presentation of the R25 B.Tech curriculum structure, including pre-semester orientation, credit distribution, L-T-P structure, and inclusion of self-learning hours.
2. Discussion of elective, minor, and honours course structures.
3. Review of B. Tech project work structure, including 3rd and 4th year industry-based semester-long IDP projects.
4. Discussion on the need to restructure L-T-P-SL-C components of selected subjects to increase tutorial and practical exposure.
5. Review of skill-development, employability, and entrepreneurship-oriented courses mapped in the curriculum. Discussed the action taken report from previous BoS meeting.
6. Review of changes made from R20/C24 to R25/C25 syllabus, with emphasis on <20% modifications aligned with industry needs and modern technologies.
7. Review on additional units incorporation to increase application-based and industry-oriented learning.
8. Discussion on integration of SDG (Sustainable Development Goals) and IKS (Indian Knowledge Systems) components across the syllabus.
9. Review of textbook and reference book updates.
10. Discussion on assessment pattern changes under R25, including revised Formative and Summative Assessment structure.
11. Discussed the action taken report from previous BoS meeting.

The following are the observations:

1. The curriculum structure is strong but requires rearrangement of certain courses to ensure better continuity from foundational to advanced topics.
2. Current syllabus contains limited coverage of animal feed formulation and feed processing, which is increasingly relevant for integrated food-agri systems.
3. Important emerging areas such as immunomodulatory effects of foods, functional ingredients, and host-microbiome interactions require more visibility in the curriculum.
4. Content on prebiotics, probiotics, and symbiotic needs stronger integration into Food Microbiology, Fermentation Technology, and Functional Foods.
5. Major gaps were identified in advanced engineering topics such as Computational Fluid Dynamics (CFD) modelling and structure-fluid interaction, which are widely used in process design.
6. Food Regulatory & Compliance content is currently insufficient and must include broader national and international frameworks.

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7. The Soft Skills Lab is placed in a semester with high academic load, making relocation necessary.

The following improvements are suggested: (Action Points)

1. Consideration of rearranging certain subjects across semesters for better thematic flow and workload balance.
2. Suggested to include new domain requirements including animal feed technology, immunomodulatory properties of foods, prebiotic & probiotic science, computational fluid dynamics modelling, and structure-fluid interaction topics.
3. Consider to revise Packaging Technology content by replacing "biodegradable" with "compostable" and adding biopolymer-compostable classifications.
4. Identification of the need to expand Food Regulatory & Compliance content to include FSSAI, ISO, Codex, and US FDA frameworks.
5. Discussion on relocating the Soft Skills Laboratory to a more suitable semester.
6. Enhancement of the industry-based project framework (IDP) in the 3rd and 4th year and inclusion of external industrial evaluators.

The following recommendations and approvals are made after the discussion:

1. BoS Members approved the revised regulations, curriculum structure, syllabus, assessment schemes of B.Tech., Food Technology programmes and it follows based on the NEP 2020.
2. The details of elective courses (Department/ Open/ Minor / Honour) of B.Tech., Food Technology Programme for the regulation R25-C25 are approved.
3. Approval to restructure L-T-P-SL-C components in selected subjects to enhance laboratory- and practice-oriented learning.
4. Approval of the <20% syllabus revisions made while transitioning from R20/C24 to C25, with specific focus on modernization and inclusion of relevant technologies.
5. The Work-in-Lieu course structure was reviewed and appreciated, acknowledging its role in promoting research-oriented learning and practical skill development.
6. NPTEL courses are approved for the Academic Year 2025-26.
7. Approval of the skill-development, employability, and entrepreneurship-oriented course mapping, ensuring alignment with current industry expectations.
8. Approval to formally integrate SDG and IKS components across the curriculum, with clear justification and mapping at course level.
9. Approval of updated textbook and reference lists, ensuring all courses incorporate the latest editions and contemporary sources.
10. The Action Taken Report (ATR) from the previous BoS meeting was reviewed and approved.

There being no further points for discussion, the Chairperson thanks all the external, internal, invited members and announced that the meeting was concluded.


Member Secretary


Chairperson

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E-mail confirmation and Geo tagged photos

Board of Studies (BOS) Meeting - Circular and Syllabus Documents for Confirmation - 12 September

From: Dr. V. N. Balasubramanian [mailto:vnbalasubramanian@gmail.com]
To: Dr. S. S. Srinivasan [mailto:sss@vignans.edu.in]
Subject: BOS Meeting - Circular and Syllabus Documents for Confirmation - 12 September

Respected Sir,
Dr. V. N. Balasubramanian, Asst. Prof., (F&T), Vignans Institute of Technology,
Vignans Institute of Technology, Senior the Institute of Technology, Dept. of
Food Engineering, Mysore
Dr. S. S. Srinivasan, Asst. Prof., (F&T), Vignans Institute of Technology,
Vignans Institute of Technology, Senior the Institute of Technology, Dept. of
Food Engineering, Mysore
Dr. S. S. Srinivasan, Asst. Prof., (F&T), Vignans Institute of Technology,
Vignans Institute of Technology, Senior the Institute of Technology, Dept. of
Food Engineering, Mysore

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Board of Studies (BOS) Meeting - Circular and Syllabus Documents for Confirmation - 12 September

From: Dr. S. S. Srinivasan [mailto:sss@vignans.edu.in]
To: Dr. V. N. Balasubramanian [mailto:vnbalasubramanian@gmail.com]
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Vignans Institute of Technology, Senior the Institute of Technology, Dept. of
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Appendix index

1. R25-C25 curriculum structure including list of professional core, department elective, open elective, Minor, Honour, NPTEL courses of B.Tech., Food Technology programme. (**Appendix – I**)
2. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development, provided in **Appendix – II**.
3. Total average percentage of syllabus revised was less than **20%** compared to previous curriculum provided in **Appendix - III**.
4. Assessment methods (Formative & Summative) as per R25 discussed. (**Appendix – IV**)
5. **Indian Knowledge System (IKS)** components are incorporated in the relevant courses and the details are mentioned in **Appendix – V**.
6. The courses in the curricula are mapped with the **Sustainable Development Goals (SDG)** and the mapping details are provided in **Appendix - VI**.
7. Action taken report from previous BoS meeting. **Appendix - VII**.

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APPENDIX I

R25-C25 curriculum structure including list of professional core, department elective, open elective, Minor, Honour, NPTEL courses of B.Tech., Food Technology programme.

B. Tech Food Technology: Curriculum Structure

II Year I Semester

Course Title	L	T	P	SL	C	Course category
Maths (P&S)	3	2	0	3	4	Basic Sciences
Principles of Food Preservation and Processing	2	0	2	2	3	Basic Sciences
Data Structures	2	2	2	2	4	Basic Engineering
Design Thinking and Engineering Orientation	0	0	2	0	1	Basic Engineering
Food Biochemistry and Nutrition	2(3)	2(0)	2	3	4	Professional Core-1
Food Microbiology	2(3)	2(0)	2	3	4	Professional Core-2
Engineering Thermodynamics	3	2	0	3	4	Professional Core-3
Total	16	6	10	12	24	

II Year II Semester

Course Title	L	T	P	SL	C	Course category
Food Chemistry	2	0	2	2	3	Basic Sciences
Industry – Interface (I ²) Course	0	0	2	0	1	Dept. Elective-1
Human Nutrition	2	2	0	2	3	Open Elective-1
Fundamentals of Fluid Mechanics	3	0	2	3	4	Professional Core-4
Heat and Mass Transfer	3	0	2	3	4	Professional Core-5
Fruits and vegetables Processing	3	0	2	3	4	Professional Core-6
Food Packaging	2	0	2	2	3	Professional Core-7
Field Projects	0	0	2	0	1	Project
Total	15	2	14	12	23	

III Year I Semester

Course Title	L	T	P	S L	C	Course category
Soft Skills Laboratory	0	0	2	0	1	Humanities
Quantitative Aptitude & Logical Reasoning	0	0	2	0	1	Humanities
Engineering Properties of Food Materials/NPTEL	2	0(2)	2(0)	2	3	Dept. Elective-2
Cereals, Legumes, Oilseed Process Technology	3	0	2	3	4	Professional Core-8

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Dairy Technology	2(3)	2(0)	2	3	4	Professional Core-9
Food Processing Operations	3	0	2	3	4	Professional Core-10
Food Plant Layout and Equipment Design	2(3)	2(0)	2	3	4	Professional Core-11
Sub-Total	14	2	12	1 2	21	
Honors/Minors (Add-on)	3	0	2	3	4	Honors/Minors
Total	17	2	14	1 4	25	

III Year II Semester

Course Title	L	T	P	SL	C	Course category
Professional Communication Skills	0	0	2	0	1	Humanities
Instrumentation and Process Control	3	0	2	2	4	Dept. Elective-3
Spices Plantation Crops Processing Technology	3	0	2	3	4	Dept. Elective-4
NPTEL	2	0	2	2	3	Open Elective-2
Bakery and Confectionery Technology	2(3)	2(0)	2	3	4	Professional Core-12
Food Safety and Quality Management	2	2	0	2	3	Professional Core-13
Inter Departmental Project	0	0	2	0	1	Project
Sub-Total	13	2	12	10	20	
Honours/Minors (Add-on)	3	0	2	3	4	Honors/Minors
Total	16	2	14	12	24	

IV Year I Semester

Course Title	L	T	P	SL	C	Course category
Food Ethics	1	2	0	0	2	Humanities
Food Business Management and Entrepreneurship Development	3	2(0)	0(2)	3	4	Dept. Elective-5
Meat Fish Poultry Processing Technology	3	0	2	3	4	Dept. Elective-6
Work-in-Lieu of Course – Research paper publications/patents/presentations/global certifications	2(3)	2(0)	2	3	4*	Dept. Elective-7
Beverage Technology/ NPTEL	2	0	2	2	3	Open Elective-3
Sub-Total	12	2	8	8	17	
Honours/Minors (Add-on)	3	0	2	3	4	Honors/Minors
Total	15	2	10	10	21	

**VIGNAN'S****DEPARTMENT OF FOOD TECHNOLOGY****IV Year II Semester**

Course Title	L	T	P	SL	C	Course category
Project/Internship	0	2	22	0	12	Project/Internship
Sub-Total	0	2	22	0	12	
Honors/Minors (Add-on)	0	2	6	0	4	Honors/Minors
Total	0	4	28	2	16	

L=Lecture; T= Tutorial; P= Practical; SL= Self Learning; C=Credits

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I. List of Department Elective Courses

S. No	Course Code	Course Title	L	T	P	SL	C
Stream - 1 Food Business Management							
1	25FT402	Food Business Management and Entrepreneurship Development	3	2(0)	0(2)	3	4
2	25FT802	Food Supply Chain Management	2	2	-	2	3
3		Production and Operations Management	2	2	-	2	3
4		Project Planning Preparation and Management	2	2	-	2	3
5		Strategy and Marketing of Food Products	2	2	-	2	3
Stream - 2 Food Engineering							
6	25FT806	Bioprocess Engineering	2	2	-	2	3
7	25FT303	Engineering Properties of Food Materials	2	0(2)	2(0)	2	3
8		Instrumentation and Process Control	3	0	2	2	4
9		Maintenance of Food Equipment	2	2	-	2	3
10		Refrigeration Engineering and Cold Chain	2	2	-	2	3
11		Biosensor Design and Application	2	2	-	2	3
Stream - 3 Food Quality and Assurance							
12		Food Quality Assurance and Certification	2	2	-	2	3
13		Food Toxicology Agrochemical Residues in Food	2	2	-	2	3
14	25FT814	Instrumental Methods of Food Analysis	2	-	2	2	3
15	25FT815	Sensory Analysis of Food	2	-	2	2	3
Stream - 4 Food Processing Technology							
16	25OE405	Beverage Technology	2	-	2	2	3
17		Emerging Trends in Food Processing	2	2	-	2	3
18		Extrusion Technology	2	2	-	2	3

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19		Meat, Poultry and Fish Processing Technology	2	0	2	2	3
20		Post-Harvest Management of Fruits and Vegetables	2	2	-	2	3
21		Spices and Plantation Crop Process Technology	2	0	2	2	3
22		Waste Management and By-Product Utilization	2	2	-	2	3
23		Work-in-Lieu of Course – Research paper publications/patents/presentations/global certifications	2(3)	2(0)	2	3	4*

II. List of Minor Courses

S. No.	Course Code	Course Title	L	T	P	SL	C	Name of the Stream (if available)
1.	25FT204	Principles of Food Preservation and Processing	3	0	2	3	4	Basic Sciences
2.	25FT213	Fruits and Vegetables Processing	3	0	2	3	4	Professional Core-9
3.	25FT305	Dairy Technology	3	0	2	3	4	Professional Core-9
4.	25FT312	Bakery and Confectionery Technology	2(3)	2(0)	2	3	4	Professional Core-12
5.	25FT313	Food Safety and Quality Management	3	2	0	3	4	Professional Core-13

III. List of Honor Courses

S. No.	Course Code	Course Title	L	T	P	SL	C	Name of the Stream (if available)
1.		Beverage Technology	2	2	2	3	4	Stream-4
2.	25FT802	Food Supply Chain Management	2	2	2	2	4	Stream-1
3.		Biosensor Design and Application	2	2	2	2	4	Stream-2
4.		Food Toxicology Agrochemical Residues in Food	2	2	2	2	4	Stream-3
5.		Project	0	2	6	3	4	

IV. List of Open Elective Courses

S. No.	Course Code	Course Title	L	T	P	SL	C
1.		NPTEL-OPEN ELECTIVE	2	2	0	2	3
2.	25OE210	Human Nutrition	2	2	0	2	3
3.	25OE311	Indian Traditional Foods	2	0	2	2	3

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V. List of SWAYAM - NPTEL Courses

S.No	Course Code	Course Name	NPTEL Course Offered by	Credits
1.	NOC25_AG01	Fundamentals of Food Process Engineering	IIT, Kharagpur	3
2.	NOC25_AG19	Food Oils and Fats: Chemistry And Technology	IIT, Kharagpur	3
3.	NOC25_AG07	Thermal Processing of Foods	IIT, Kharagpur	3
4.	NOC25_AG06	Thermal Operations in Food Process Engineering: Theory and Applications	IIT, Kharagpur	3
5.	NOC25_AG03	Novel Technologies for Food Processing and Shelf-Life Extension	IIT, Kharagpur	3
6.	NOC25_AG05	Cooling Technology: Why and How utilized in Food Processing and allied Industries	IIT, Kharagpur	3
7.	NOC24_AG06	Impact of Flow of Fluids in Food Processing and Preservation	IIT, Kharagpur	3
8.	NOC24_AG06	Modern Food Packaging Technologies: Regulatory Aspects and Global Trends	IIT, Kharagpur	3
9.	NOC25_CE109	Municipal Solid Waste Management (Open Electives)	IIT Guwahati	3
10.	NOC25_AG20	Irrigation and Drainage (Open Electives)	IIT, Kharagpur	3

K. Sanyal
Member Secretary

Nand
Chairperson

APPENDIX - II
List of Courses that Enables Employability or Entrepreneurship or Skill Development

S. No	Course Code	Course Title	Course Category	Year of Introduction	Employability / Entrepreneurship / Skill Development	Justification
II Year I Semester						
1	25BS201	Maths (P&S)	Basic Science	2016	Skill Development	Enhances analytical and quantitative skills, enabling students to develop problem-solving and logical reasoning abilities.
2	25BS202	Principles of Food Preservation and Processing	Basic Science	2019	Skill Development	Builds practical skills in applying preservation techniques and processing methods to ensure food quality and safety.
3	25BE203	Data Structures	Basic Engineering	2016	Skill Development	Develops logical thinking, structured programming skills, and the ability to design efficient solutions using data structures.
4	25BE204	Design Thinking and Engineering Orientation	Basic Engineering	2024	Entrepreneurship	Fosters creative ideation and prototype development for innovative food products.
5	25FT205	Food Biochemistry and Nutrition	Professional Core	2014	Skill Development	Develops the ability to analyze nutrient composition and biochemical changes in foods, enhancing skills for nutritional assessment and product quality evaluation.
6	25FT206	Food Microbiology	Professional Core	2014	Skill Development	Enhances practical skills in microbial identification, handling, and control methods to ensure food safety and quality in

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7	25FT207	Engineering Thermodynamics	Professional Core	2016	Skill Development	processing and storage. Develops the ability to analyze energy transformations and apply thermodynamic principles for designing and optimizing food processing operations.
II Year II Semester						
8	25BS208	Food Chemistry	Basic Science	2018	Skill Development	Builds skills in understanding the chemical composition and reactions in foods, enabling analysis of quality parameters and formulation of stable food products.
9	25FT209	Industry – Interface (I)	Dept. Elective	2022	Employability	Offers industry exposure and practical learning through field interaction.
10	25OE210	Human Nutrition	Open Elective	2022	Employability	Enhances the ability to assess dietary needs and plan balanced diets, supporting careers in nutrition counseling, wellness management, and public health programs.
11	25FT211	Fundamentals of Fluid Mechanics	Professional Core	2014	Skill Development	Develops the ability to analyze fluid flow behavior and apply fluid mechanics principles in designing and optimizing food processing and handling systems.
12	25FT212	Heat and Mass Transfer	Professional Core	2014	Skill Development	Enhances the ability to analyze and apply heat and mass transfer principles for efficient design and optimization of food processing and preservation operations.
13	25FT213	Fruits and Vegetables Processing	Professional Core	2014	Employability	Enhances technical knowledge in handling, processing, and preserving fruits and vegetables, supporting employment in food

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					production, quality control, and value-added product industries.
14	25FT214	Food Packaging	Professional Core	2016	Skill Development Builds competency in selecting and evaluating appropriate packaging materials and technologies to ensure product safety, shelf life extension, and marketability in the food industry
15	25FT215	Field Project	Project	2024	Entrepreneurship Encourages entrepreneurial mindset by providing hands-on experience in identifying real-world problems, developing feasible solutions, and implementing them as practical food business or process improvement ideas.
III Year I Semester					
16	25HS301	Soft Skills Laboratory	Humanities	2016	Employability Improves communication, leadership, and team interaction skills.
17	25HS302	Quantitative Aptitude & Logical Reasoning	Humanities	2022	Employability Strengthens reasoning and aptitude for placement readiness.
18	25FT303	Engineering Properties of Food Materials	Dept. Elective	2022	Skill Development Hands-on testing of physical and rheological properties of foods.
19	25FT304	Cereals, Legumes and Oilseed Process Technology	Professional Core	2016	Skill Development Develops practical skills in processing, milling, extraction, and value-addition techniques for cereals, legumes, and oilseeds, enabling students to optimize product quality and yield.
20	25FT305	Dairy Technology	Professional Core	2016	Skill Development Builds hands-on skills in milk processing operations, standardization, fermentation,

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					and dairy product formulation to maintain quality and safety standards.
21	25FT306	Food Processing Operations	Professional Core	2021	Skill Development Develops practical skills in operating, monitoring, and optimizing food processing equipment and unit operations to ensure efficiency, product quality, and safety.
22	25FT307	Food Plant Layout and Equipment Design	Professional Core	2016	Employability Builds skills in designing efficient plant layouts and selecting appropriate equipment to optimize workflow, ensure hygiene, and enhance productivity in food processing industries.
III Year II Semester					
23	25HS308	Professional Communication Skills	Humanities	2016	Employability Enhances employability by developing effective verbal and written communication skills, professional etiquette, and interpersonal abilities required in workplace environments.
24	25FT309	Instrumentation and Process Control	Dept. Elective	2016	Skill Development Develops practical skills in operating analytical instruments and applying process control techniques to monitor, regulate, and optimize food processing operations.
25	25FT310	Spices and Plantation Crop Process Technology	Dept. Elective	2016	Entrepreneurship Encourages entrepreneurial skills by providing knowledge on processing, value-addition, branding, and commercialization of spices and plantation-based products for small and medium-scale enterprise development.

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26	25OE311	Indian Traditional Foods	Open Elective	2022	Entrepreneurship	Promotes entrepreneurial thinking by enabling students to develop, standardize, and market traditional food products with a focus on quality, authenticity, and niche consumer markets.
27	25FT312	Bakery and Confectionery Technology	Professional Core	2016	Entrepreneurship	Builds entrepreneurial capability through hands-on training in bakery and confectionery product formulation, production management, cost calculation, and small-scale business setup.
28	25FT313	Food Safety and Quality Management	Professional Core	2016	Employability	Enhances employability by developing competencies in food safety regulations, quality control systems, and auditing practices essential for roles in food industries and regulatory bodies.
29	25FT314	Inter-Departmental Project	Project	2020	Entrepreneurship	Encourages innovative thinking and entrepreneurial initiative by enabling students to identify real-world challenges and develop viable product or process-based solutions across disciplines.
IV Year I Semester						
30	25HS401	Food Ethics	Humanities	2022	Employability	Enhances employability by strengthening ethical decision-making, professional responsibility, and awareness of food laws and consumer rights within the food industry.
31	25FT402	Food Business Management	Dept.	2022	Entrepreneurship	Develops entrepreneurial competencies by

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		and Entrepreneurship Development	Elective			providing knowledge on business planning, financial management, marketing strategies, and startup development in the food sector.
32	25FT403	Meat, Fish and Poultry Processing Technology	Dept. Elective	2020	Employability	Builds technical skills in handling, processing, preservation, and quality control of meat, fish, and poultry products, preparing students for roles in processing industries and quality assurance units.
33	25FT404	Work-in-Lieu of Course (Publications/Certifications)	Dept. Elective	2025	Skill Deveopment	Enhances skill development by encouraging students to engage in research publications, professional certifications, and knowledge upskilling for academic and industry competence.
34	25OE405	Beverage Technology	Open Elective	2022	Entrepreneurship	Promotes entrprenership by imparting knowledge on formulation, processing, packaging, and branding of beverages, enabling students to develop and market innovative beverage products.
IV Year II Semester						
		Project / Internship	Project / Internship	2014	Employability	Strengthens employability by providing hands-on industry exposure and practical project experience, enabling students to apply theoretical knowledge to real-time food processing and quality systems.
35	25FT406					

P. Jayanthi
Member Secretary

Nandini
Chairperson

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APPENDIX - III

Comparison of Course Contents between R25-C25 and R22-C22/C24 Curriculums

S. No.	Course Code	Course Title	% of Changes	Justification for the Changes
1	25FT204	Principles of Food Preservation and Processing	20%	Modules I & II revised with applications and case studies on conventional and novel preservation (HPP, PEF, Plasma, Ohmic). Added SDG/IKS mapping and modernized lab components.
2	25FT299	Design Thinking and Engineering Orientation	15%	Introduced as per NEP 2020 for creativity and innovation, includes applications and design case studies related to food products, packaging, and process innovation.
3	25FT202	Food Biochemistry and Nutrition	20%	Both modules updated with applications on metabolism and diet formulation.
4	25FT201	Food Microbiology	20%	Introduced IKS-based nutrition principles and case studies linking diet to health.
5	25FT205	Engineering Thermodynamics	15%	Both modules enhanced with applications and case studies on fermentation, spoilage control, and microbial safety.
6	25FT102	Food Chemistry	20%	Modules enriched with case studies on energy balance and refrigeration cycles applied to food systems.
7	25FT851	Human Nutrition (Open Elective - I)	20%	Both modules updated with applications and case studies on food pigments, flavors, and additives.
8	25FT205	Fundamentals of Fluid Mechanics	15%	Both modules revised with case studies on clinical and community nutrition, linking diet to SDG 3 and 2.
9	25FT206	Heat and Mass Transfer	20%	Modules enhanced with case studies and plant-based examples on flow through pipes, pumps, and mixers in food industries.
10	25FT902	Fruits and Vegetables Processing	20%	Both modules revised with industrial drying and evaporation applications and case-based process analysis.
11	25FT901	Food Packaging	20%	Modules revised with applications on minimal processing, cold chain, and case studies on enzymatic browning control.
				Both modules enriched with case studies on biodegradable and active

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packaging; shelf-life modelling integrated.

Provides NPTEL

2	25FT807	Engineering Properties of Food Materials / NPTEL	15%	Modules include rheological and textural case studies. Provides NPTEL equivalence with in-house lab component.
3	25FT301	Cereals, Legumes & Oilseed Process Technology	20%	Modules revised with case studies on membrane filtration, probiotic milk sustainability-based process design.
4	25FT302	Dairy Technology	20%	Modules revised with case studies on products, and energy conservation.
5	25FT303	Food Processing Operations	20%	Modules updated with automation and optimization case studies (RSM, ANN). Enhanced experimental linkage.
6	25FT401	Food Plant Layout and Equipment Design	15%	Modules revised with CAD layout, sanitation zoning, and sustainable plant design case studies.
16	25FT808	Instrumentation & Process Control / NPTEL	20%	Both modules include IoT, PLC/SCADA, and sensor-based case studies. NPTEL linkage provides flexibility.
17	25FT821	Spices & Plantation Crop Process Technology	20%	Modules revised with case studies on functional fermented foods and regional traditional processing methods (IKS).
18	25FT903	Indian Traditional Foods (Open Elective - II)	20%	Modules revised with case studies on gluten-free and functional bakery innovations. Formulations; IKS emphasis added.
19	25FT306	Bakery & Confectionery Technology	20%	Modules include case studies on gluten-free and functional bakery innovations. Enhanced product-based practicals.
20	25FT306	Food Safety & Quality Management	20%	Modules updated with case studies on FSMS, HACCP, and ISO standards. Strengthened SDG 3 & 12 linkage.
21	25FT306	Food Ethics (Humanities)	New	Introduced per NEP 2020; case studies on ethical decision-making, sustainability, and food law practices.
22	25FTETH	Food Business Management & Entrepreneurship Development	20%	Modules revised with business plan development, startup incubation, and marketing case studies.
23	25FT801	Meat, Poultry & Fish Processing Technology	20%	Modules revised with case studies on hygiene, cold chain, ozone/irradiation treatment, and export compliance.

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25	25FT816	Beverage Technology / NPTEL (Open Elective - III)	20%	Modules include case studies on functional, carbonated, and fermented beverages with process optimization.
26	25FT802	Food Supply Chain Management	20%	Both modules updated with logistics optimization, cold chain case studies, and sustainability metrics; aligns with SDG 9 & 12.
27	25FT803	Production & Operations Management	15%	Both modules revised with industrial case studies on lean manufacturing, capacity planning, and quality assurance integration.
28	25FT804	Project Planning, Preparation & Management	20%	Modules expanded with case studies on feasibility analysis, DPR preparation, and risk assessment in food industries.
29	25FT805	Strategy & Marketing of Food Products	20%	Both modules include practical case studies on product positioning, branding, and consumer perception analytics.
30	25FT806	Bioprocess Engineering	20%	Modules updated with case studies on fermentation, enzyme technology, and bioreactor scale-up; aligned with SDG 9.
31	25FT809	Maintenance of Food Equipment	15%	Both modules revised with case studies on preventive maintenance, TPM, and downtime analysis in food plants.
32	25FT810	Refrigeration Engineering & Cold Chain	20%	Both modules enriched with case studies on refrigeration cycles, energy optimization, and cold-chain logistics.
33	25FT811	Biosensor Design & Application	20%	Modules revised with case studies on biosensor-based food safety testing and IoT-enabled quality monitoring.
34	25FT812	Food Quality Assurance & Certification	20%	Modules revised with practical case studies on ISO/FSSC certification and global quality benchmarking.
35	25FT813	Food Toxicology & Agrochemical Residues in Food	20%	Modules updated with case studies on pesticide residue analysis, toxicological evaluation, and regulatory compliance.
36	25FT814	Instrumental Methods of Food Analysis	20%	Both modules revised with case studies and applications of GC-MS, HPLC, and spectrophotometry in food testing.
37	25FT815	Sensory Analysis of Food	20%	Both modules enriched with sensory case studies, statistical interpretation, and trained panel techniques.
38	25FT817	Emerging Trends in Food	20%	Both modules updated with applied case studies on 3D food printing, non-



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25FT818	Processing Extrusion Technology	20%	thermal technologies, and clean-label foods.
25FT820	Post-Harvest Management of Fruits & Vegetables	20%	Both modules revised with case studies on cereal extrusion, co-extrusion, and texture optimization; process modelling examples added.
25FT822	Waste Management & By- Product Utilization	20%	Both modules updated with applications and case studies on storage engineering, logistics, and sustainable handling. Both modules revised with applications on waste valorization, biogas recovery, and circular economy models.

K. Sankar
Member Secretary

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Chairperson

**VIGNAN'S**

FOOD TECHNOLOGY DEPARTMENT

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DEPARTMENT OF FOOD TECHNOLOGY**APPENDIX IV****Revised formative Assessment schemes – R25****Formative question paper Structure and Marks Distribution:****VFSTR:: VADLAMUDI**

(Deemed to be UNIVERSITY)

Office of Dean - Academic, Assessment and Awards

Date: 23.01.2023

CIRCULAR

R22 primarily focuses on experiential learning. With continuous learning and assessment in practice, it is decided to further strengthen the assessment pattern by bringing in some changes as mentioned below.

Targets	R-22 Current	R-22 Revised Module 1	R-22 Revised Module 2	Pattern	Blooms Taxonomy Level
Pre Target-1	10 Marks	6 Marks (mid of 1st Week)	6 Marks (mid of 2nd Week)	2Q+3M = 18 Marks Scale down to 6 Marks	1 & 2
Target-1	20 Marks (10 Marks + 10 Marks) Total = (10+10) = 20 Marks (End of 5th Week)	8 Marks (4 Marks + 4 Marks) Total = 4+4 = 8 Marks (End of 5th Week)	8 Marks (4 Marks + 4 Marks) Total = 4+4 = 8 Marks (End of 5th Week)	2Q+10M = 20 Marks Scale down to 8 Marks	2, 3 & 4
Target-2	10 Marks (2 Reviews)	3 Marks (T2)	3 Marks (T2)	3 Marks Scaled down to 3 Marks	3, 4 & 5
Target-3	10 Marks (2 Reviews) (end of 7th Week)	3 Marks (T3) (DEB/OPA Review) (Only 1 Review) (End of 7th Week)	3 Marks (T3) (Value Based Presentation) (Only 1 Review) (End of 7th Week)	3 Marks Scaled down to 3 Marks	3, 4 & 5
Target-4	10 Marks (end of 8th Week)	20 Marks (end of 8th Week)	20 Marks (end of 8th Week)	1) 3Q+5M = 25 Marks 2) 10Q+5M = 2 Marks	3, 4 & 5
Target-5	20 Marks	20 Marks	20 Marks	20 Marks	3, 4 & 5
Total	60 Marks	60 Marks	60 Marks		


Prof. P. Suresh
Controller of Examination
VFSTR/23/01/2023


Prof. B. Vijaya Kumar
Dean - AAA & FA

Summative question paper Structure and Marks Distribution:

Question paper carries 60 marks with a duration of 2.5 hours.

- Two sets (Set-I & Set-II) must be prepared.
 - Section A: 4 questions $\times$ 8 marks = 32 marks;
 - Section B: 2 questions $\times$ 14 marks = 28 marks.
- Each question should have three sub-questions (a, b, c) assessing different cognitive levels.
- Critical thinking, problem-solving, and real-world food science relevance.
- Cognitive Level Distribution: (a) Conceptual understanding (easy, 25%) (b) Application or interpretation (moderate, 35%) (c) Analytical or creative thinking (challenging, 40%)



DEPARTMENT OF FOOD TECHNOLOGY

APPENDIX V

IKS Components Incorporated in R25-C25 Curriculum

I. Details of IKS Components Incorporated in R25-C25 Curriculum

Course Type	Total Number of Courses	Number of Courses Incorporating IKS	Percentage (%)
Basic Sciences	3	2	67 %
Basic Engineering	2	0	0 %
Humanities	4	1	24 %
Professional Core	13	13	100 %
Department Electives	7	6	85.71 %
Open Electives	3	3	100 %
Minors	5	5	100 %
Honours	5	5	100 %
Total	42	35	53 %

DEPARTMENT OF FOOD TECHNOLOGY

II. List of Courses in the R25-C25 Curriculum Incorporating IKS

IKS Components Incorporated					
S. No.	Course code	Course Title	Course Category	Module (Unit)	
1	25FT204	Principles of Food Preservation and Processing	Basic Sciences	M1, M2	blanching(<i>Uṣṭhakarana</i>), heat sterilisation(<i>Agni-samrakṣaṇa</i>), High-Pressure Processing (HPP)(<i>Uccapāṭana Samrakṣaṇa</i>),
2	25FT209	Design Thinking and Engineering Orientation	Basic Engineering	M1, M2	thinking(<i>Kalpanā-śakti / Nirmīti-buddhi</i>), Prototype(<i>Mūrti-rūpa Nirmīti</i>), concepts(<i>Dr̥ṣya-rūpa Pratipādana</i>), feedback collection(<i>Pratiphal-tābha</i>), innovations(<i>Apacāya-se Artha Saṁskāra</i>)
3	25FT205	Food Biochemistry and Nutrition	Professional Core-1	M1, M2	Introduction to human nutrition(<i>Ahāra-vidyā / Puruṣa-poshana</i>); Deficiency disorders of nutrients(<i>Doṣa-janya Vikāra</i>), Evaluation of protein quality(<i>Māṁsa-dhātu-guṇa-mālyāṅkana</i>), Energetics in metabolism(<i>Śakti-gyavasthāna</i>). Bioavailability of nutrients(<i>Poshaka-dravya upalabdhitā</i>),
4	25FT206	Food Microbiology	Professional Core-2	M1, M2	foodborne diseases: infections(<i>Ākrantaṇa-ruga</i>), Microscopic examination(<i>Sākṣma-darśana parikṣā</i>), bio-preservatives(<i>Prakṛti-samrakṣaka</i>),
5	25FT207	Engineering Thermodynamics	Professional Core-3	M2	Limitations of the first law of thermodynamics(<i>Samskara</i>), Type and Importance of Refrigerants(<i>Vāyu, Jala, Samskara</i>), closed systems and control volumes(<i>Dharana</i>)
6	25BS208	Food Chemistry	Basic Sciences	M1, M2	sorption isotherm(<i>Jala-grāhita-sambandha</i>); prebiotics & probiotics(<i>Pārva-jevāṇu & Jeevana-sahāyaka Ahāra</i>). , Case studies of food safety incidents and their management(<i>Ahāra-suraṁkṣā ghatnā aur samādāna</i>).
7	25OE210	Human Nutrition	Open Elective-1	M1, M2	proteins, and lipids(<i>Sarīra Nirmāṇa Dravya, Māṁsa Dhātu Poshana</i>). bioavailability(<i>Grahaṇa-Pāchana-Poshana</i>), and disease(<i>Sharīra Rachana</i>). and sports (<i>Pathya-Apathya</i>).
8	25FT211	Fundamentals of Fluid Mechanics	Professional Core-4	M1, M2	Orifice meter(<i>Pravāha-māpan Yantra</i>), Important non-dimensional numbers(<i>Anātrik Saṁkhyā</i>)

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9	25FT212	Heat and Mass Transfer	Professional Core-5	M1,M2	Estimation of steady state heat flow(<i>Sthira Uṣma-pravāha</i>); Mass transfer operations (<i>Dravya-samprakramaṇa kriyā</i>), Design consideration facts(<i>Rachana-vicāra</i>).
10	25FT213	Fruits and Vegetables Processing	Professional Core-6	M1,M2	Pre & post-harvest(<i>Kṛtī-uttara Parivartana</i>), Process technology(<i>Prakriyā-vidhān</i>), Waste management strategies (<i>Apavyaya Nīyantraṇa Ntī</i>)
11	25FT901	Food Packaging	Professional Core-7	M1,M2	functions of food packaging(<i>Rakṣaṇa</i>), FFS (Form-Fill-Seal) machines(<i>Rāpa-Pāṇya-Saṁdhāna Yantra</i>), active packaging: smart packaging(<i>Sakriya Patra</i>), Intelligent packaging(<i>Buddhimān Patra</i>).
12	25FT807	Engineering Properties of Food Materials / NPTEL	Dept. Elective-2	M1,M2	Mechanical properties(<i>Yantrika Guṇa</i>), Determining the frictional properties of food materials(<i>Ghṛṣṇa Guṇa Nirṇaya</i>), Impact of physical state on rheological behaviour(<i>Sthiti-Ādhārita Pravāha-Vyavahāra</i>);
13		Engineering Properties of Food Materials / NPTEL	Professional Core-8	M1,M2	methods of grain drying(<i>Anāj Śoṣaṇa</i>); Baking quality of wheat(<i>Gādhām Prakriyā</i>), Pre-processing(<i>Pūrva-sādhana</i>), amino acids availability in different oilseed meals(<i>Khādiya Utpadan Vikas</i>).
14	25FT305	Dairy Technology	Professional Core-9	M1,M2	Filtration(<i>Suddhi-karṇa</i>), Detection of common adulterants present in milk(<i>Mūhya-yoga pāṭhāna</i>); Method of manufacture(<i>Nirmāṇa paddhati</i>);
15	25FT306	Food Processing Operations	Professional Core-10	M1,M2	heat transfer in food processing(<i>Uṣm Parivahana</i>), bucket elevators(<i>Dravya-samcāra</i>), waste-to-energy technologies(<i>Śeṣa-urja paripāṇa</i>)
16	25FT307	Food Plant Layout and Equipment Design	Professional Core-11	M1,M2	Traditional waste-management systems(<i>Āhāra Udhog Sthal Racana Prayoga</i>), minimum thickness after forming(<i>Āhāra Prakriyā Yantra Racana</i>).
17		Instrumentation and Process Control / NPTEL	Dept. Elective-3	M1,M2	Measurement of food process variables(<i>Āhāra-Prakriyā Parimāṇa Māpanam</i>), Viscosity measurement(<i>Snigdhātva Māpanam</i>), Smart packaging sensors for spoilage detection(<i>Jivanta & Mita Dravya Jāḍna Yantra</i>)
18		Spices and	Dept.	M1,M2	Storage and packaging of spices(<i>Masālā Bhāṇḍāra evam Pāka-</i>

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	Plantation Crops Processing Technology	Elective-4		<i>Prabandhan</i>), methods, processing (<i>Prakriyā aur Rasayan Nirmāṇ</i>). Cryogenic grinding(<i>Śtala Pisāṇ</i>); Processing of Virgin coconut oil, cashew & its by-products(<i>Kaṣṭha Prakriyā aur Upapādā</i>). Importance of value addition(<i>Māṭya Vardhan Mahattva</i>).
19	25OE311 Indian Traditional Foods	Open Elective-2	M1,M2	Introduction to traditional food patterns (<i>Ahara Vinana</i>), shelf-life extension (<i>Shirata</i>). . Study of energy and environmental costs associated with traditional food production (<i>Haridra Dugdha</i>), nutrient fortification(<i>Bhasma Kalpana</i>).
20	25FT312 Bakery and Confectionery Technology	Professional Core-12	M1,M2	Importance of the consistency of the dough (<i>Bākari,Mūla Siddhānta</i>), 3D Food Printing (<i>Mithaiya Nirmāṇa evam Prakriyā</i>),
21	25FT313 Food Safety and Quality Management	Professional Core-13	M1,M2	feedback integration (<i>Gaṇ Nyantraṇa, Prabandhan evam Navin Prandhyogikā</i>). Evolution of food laws in India(<i>Āhāra Kayde Vikāśa</i>), Food Safety Management Systems(<i>Āhāra Surakṣā Prabandhan</i>);
22	Food Ethics	Humanities	M1,M2	Ethical Values in various Professions (<i>Āhāra Natikata</i>). Ethical issues in risk communication (<i>Vyavasaयika Natikata</i>). Sustainability(<i>Sthāyitva</i>). Ethics in the Food and Beverage Industry (<i>Lokadharma and Swadeshi</i>).
23	25FT402 Food Business Management and Entrepreneurship Development	Dept. Elective-5	M1,M2	Market Survey Techniques(<i>Haat Vyavastha, Paramparik Bazaar</i>); Project scheduling with limited resources(<i>Sinchai Samayajan, Panchayat Samay Vinayaga</i>). ; Financial institution in promoting food processing units(<i>Sahakarī Saisthā</i>). Licensing and franchising models(<i>Ājāpātra-Sahakarī Mādhyama</i>);
24	Meat, Fish & Poultry Processing Technology	Dept. Elective-6	M1,M2	Processing and preservation methods(<i>Prakriyā, Sanrakṣa Vidhā</i>). Fish as raw material for processing (<i>Matya Kaccha Dravya, Prakriyā</i>) ; Demonstration of by-products of fish processing industry(<i>Upa Upaṇad Nirmāṇa</i>). Safety and control measures(<i>Surakṣā, Nyantraṇa Kriyā</i>). Demonstration of preservation of eggs through freezing & drying(<i>Śtikaran,</i>



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Śākraṇa).
classification of beverages (*Dravya Vibhāga*), formulation of carbonated beverages (*Chāyā Pāna, Rasa Vikāsa*), fermentation techniques for fruit and plant-based beverages (*Jīva Anukrama*), IoT in beverage manufacturing for real-time quality control (*Kalpānātmaka Buddhimattā, Yantrika Anubhava, Guṇa Nīrddhāraṇa*).

25FT816	Beverage Technology / NPTEL	Open Elective-3	M1, M2
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B. S. S. S.
Member Secretary

N. S. S.
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DEPARTMENT OF FOOD TECHNOLOGY

APPENDIX – VI SDG Mapped Courses in R25-C25 Curriculum

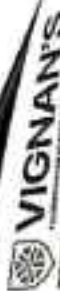
I. Details of SDG Mapped Courses in R25-C25 Curriculum

Course Type	Total Number of Courses	Number of Courses Mapped with SDGs	Percentage (%)
Basic Sciences	3	2	67 %
Basic Engineering	2	0	0 %
Humanities	4	1	24 %
Professional Core	13	13	100 %
Department Electives	7	6	85.71 %
Open Electives	3	3	100 %
Minors	5	5	100 %
Honours	5	5	100 %
Total	42	35	53 %

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II. List of R25-C25 Courses Mapped with SDGs along with Justification

S. No.	Course code	Course Title	Course Category	SDG Justification
1	25FT204	Principles of Food Preservation and Processing	Basic Sciences	SDG 2 : Preservation methods extend shelf life, reduce food waste, and ensure food security. SDG 3 : Emphasis on microbial safety, reduced chemical preservative use, and nutrient retention. SDG 7 : Adoption of energy-efficient technologies (e.g., ohmic heating, freeze-drying, membrane processes). SDG 9 : Use of advanced preservation technologies (HPP, PEF, plasma) promotes sustainable food industries. SDG 12 : Focus on food waste reduction, sustainable packaging, and recycling practices
2	25FT299	Design Thinking and Engineering Orientation	Basic Engineering	SDG 2 Empathy-driven problem solving for nutritional food security. SDG 3 Consumer-focused prototypes ensuring safe and healthy food choices. SDG 4 : Developing creative thinking, teamwork, and innovation skills. SDG 7: Promoting renewable energy integration in food systems. SDG 8 : Fostering entrepreneurship and food startups. SDG 9 : Building innovative, scalable food technologies. SDG 12: Implementing circular economy and waste-to-value in food. SDG 13 : Driving sustainable packaging, processing, and eco-friendly systems.
3	25FT205	Food Biochemistry and Nutrition	Professional Core-1	SDG 2: Nutrient profiling, diet formulation, and protein quality evaluation address nutritional security and food sufficiency. SDG 3: Focus on metabolism, bioavailability, and balanced diet formulation supports public health and disease prevention. SDG 4: Hands-on laboratory practices and skills in nutrient analysis enhance professional competencies in food and health sciences. SDG 12 : Emphasis on nutrient retention, food quality, and prevention of losses during



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4	25FT206	Food Microbiology	Professional Core-2	processing encourages sustainable nutrition practices. SDG 2: Zero Hunger: Microbial fermentation enhances food preservation, nutritional value, and reduces post-harvest losses. SDG 3 – Good Health & Well-being: Study of probiotics, pathogen detection, and safety measures supports better health outcomes. SDG 6 – Clean Water & Sanitation: Microbial quality assessment of milk, water, and food prevents contamination-related diseases. SDG 9 – Industry, Innovation & Infrastructure: Industrial microbiology applications (enzymes, SCP, fermentation products) strengthen bio-based industries. SDG 12 – Responsible Consumption & Production: Focus on fermentation, bio-preservation, and waste reduction ensures sustainable food systems.
5	25FT207	Engineering Thermodynamics	Professional Core-3	SDG 4 (Quality Education): Enhances conceptual understanding and analytical problem-solving using laws of thermodynamics. SDG 7 (Affordable and Clean Energy): Understanding of energy systems, efficiency, and renewable energy cycles. SDG 9 (Industry, Innovation & Infrastructure): Informs the design and optimization of power plants, refrigeration systems, and heat engines. SDG 12 (Responsible Consumption & Production): Promotes efficient energy utilization and thermodynamic analysis for sustainability.
6	25BS208	Food Chemistry	Basic Sciences	SDG 2 – Zero Hunger: Understanding food chemistry supports nutrient retention and value addition to improve food security. SDG 3 – Good Health & Well-being: Focus on nutraceuticals, toxin reduction, and functional foods enhances public health. SDG 6 – Clean Water & Sanitation: Studies on food toxicants, pesticides, and contaminants contribute to safe water-food systems. SDG 9 – Industry, Innovation & Infrastructure: Advances in nutraceutical analysis (HPLC, GC-MS) support industrial food innovation.

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7	25OE210	Human Nutrition	Open Elective-1	SDG 12 – Responsible Consumption & Production: Emphasis on food safety, sustainable food regulation, and quality assurance ensures sustainable production. SDG 2 – Zero Hunger: Balanced diet formulation and RDA-based recommendations address food security and nutrition equity. SDG 3 – Good Health & Well-being: Emphasis on nutrient bioavailability, diet planning, and chronic disease prevention improves health outcomes. SDG 4 – Quality Education: Hands-on training in diet formulation, nutritional assessment, and practical exposure fosters professional competencies. SDG 5 – Gender Equality: Focus on nutritional needs of women (pregnancy, lactation) ensures equitable health interventions. SDG 12 – Responsible Consumption & Production: Encourages sustainable dietary practices, prevention of malnutrition, and optimal resource utilization.
8	25FT211	Fundamentals of Fluid Mechanics	Professional Core-4	SDG 3 (Good Health & Well-being): Hygienic fluid flow systems in food processing SDG 4 (Quality Education): Experimental and applied learning SDG 6 (Clean Water & Sanitation): Measurement and conservation of fluid systems SDG 9 (Industry, Innovation & Infrastructure): Fluid machinery design (pumps, blowers, valves) SDG 12 (Responsible Consumption & Production): Optimizing fluid systems for minimal waste and energy use
9	25FT212	Heat and Mass Transfer	Professional Core-5	SDG 3: Good Health and Well-being – Understanding principles of heat transfer aids in the design of efficient processing equipment that preserve nutrients and food safety. SDG 9: Industry, Innovation, and Infrastructure – Fundamental for innovating thermal systems in the food and pharma industries. SDG 12: Responsible Consumption and Production – Enables optimization of heat energy and resource use in processing systems.
10	25FT213	Fruits and Vegetables	Professional Core-6	SDG 2 – Zero Hunger: Preservation & processing improve shelf life and availability of nutrient-rich fruits/vegetables.

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	Processing		SDG 3 – Good Health & Well-being: Focus on nutritional quality, microbial safety, and minimizing harmful additives. SDG 7 – Affordable & Clean Energy: Emphasis on energy-efficient drying, refrigeration, and waste valorization into biofuel. SDG 9 – Industry, Innovation & Infrastructure: Adoption of modern processing equipment and sustainable packaging. SDG 12 – Responsible Consumption & Production: Zero-waste approaches, circular economy, and efficient by-product utilization.
25FT901	Food Packaging	Professional Core-7	SDG 2 – Zero Hunger: Packaging improves shelf life, reduces spoilage, and ensures wider food availability. SDG 3 – Good Health & Well-being: Focus on safe, non-toxic, antimicrobial, and smart packaging to ensure food safety. SDG 7 – Affordable & Clean Energy: Adoption of energy-efficient packaging machinery and recyclable materials. SDG 9 – Industry, Innovation & Infrastructure: Development of advanced, AI-enabled, and IoT-based packaging strengthens food industry infrastructure. SDG 12 – Responsible Consumption & Production: Promotion of biodegradable, recyclable, and zero-waste packaging materials supports sustainability.
25FT807	Engineering Properties of Food Materials / NPTEL	Dept. Elective-2	SDG 2 – Zero Hunger: Helps in designing processes to minimize post-harvest losses. SDG 3 – Good Health & Well-being: Water activity and shelf life extension ensure food safety. SDG 6 – Clean Water & Sanitation: Moisture control and sorption isotherms guide safe food storage. SDG 7 – Affordable & Clean Energy: Thermal property data enables energy-efficient drying, heating, and cooling. SDG 9 – Industry, Innovation & Infrastructure: Food property databases aid in advanced equipment design.

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13	Cereals, Legumes, Oilseed Process Technology	Professional Core-8	SDG 12 – Responsible Consumption & Production: Reduces food waste through optimized storage and processing. SDG 13 – Climate Action: Energy-efficient process design contributes to reduced carbon footprint. SDG 2 – Zero Hunger: Efficient processing enhances food availability, nutritional security, and reduces grain losses. SDG 3 – Good Health & Well-being: Focus on safe processing, quality cereal/oilseed products, and nutrition-rich meals. SDG 7 – Affordable & Clean Energy: Grain drying and oilseed processing encourage energy-efficient technologies. SDG 9 – Industry, Innovation & Infrastructure: Adoption of advanced milling, extrusion, and processing technologies strengthens agro-industrial growth. SDG 12 – Responsible Consumption & Production: Utilization of by-products (bran, husk, oilseed meals) supports circular economy and waste minimization.
14	25FT305 Dairy Technology	Professional Core-9	SDG 2 – Zero Hunger: Dairy technology contributes to food security through the processing of milk and value-added dairy products (milk powders, infant foods, fermented milk products). SDG 3 – Good Health & Well-being: Production of safe, nutritious milk products like probiotic yoghurt, fortified milk, paneer, and cheese enhances public health and nutrition. SDG 6 – Clean Water & Sanitation: Adoption of CIP (Cleaning-in-Place) methods in dairy plants ensures hygiene, water efficiency, and sustainable sanitation practices. SDG 8 – Decent Work & Economic Growth: Dairy sector generates significant employment in rural and urban areas through production, processing, and distribution. SDG 9 – Industry, Innovation & Infrastructure: Advances in pasteurization, homogenization, UHT, spray drying, and whey processing strengthen dairy innovation. SDG 12 – Responsible Consumption & Production: By-product utilization (whey, ghee,

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15	25FT306	Food Processing Operations	Professional Core-10	residue, buttermilk, casein) promotes sustainability and waste minimization. SDG 13 – Climate Action: Energy-efficient milk processing and reduction of carbon footprint in storage/transport. SDG 2 – Zero Hunger: Enhancing food availability and safety through efficient processing. SDG 3 – Good Health & Well-being: Safer preservation methods reduce foodborne risks. SDG 7 – Affordable & Clean Energy: Energy-efficient drying, waste-to-energy, and renewable energy integration. SDG 9 – Industry, Innovation & Infrastructure: Adoption of novel processing, nanotechnology, and automation in food industries. SDG 12 – Responsible Consumption & Production: Waste reduction, recycling, and valorization support circular economy. SDG 13 – Climate Action: Promoting eco-friendly, low-carbon food processing practices.
16	25FT307	Food Plant Layout and Equipment Design	Professional Core-11	SDG 2 – Zero Hunger: Efficient layouts and equipment ensure large-scale, safe food production. SDG 3 – Good Health & Well-being: Hygienic design reduces contamination risks. SDG 7 – Affordable & Clean Energy: Energy-efficient layouts minimize resource use. SDG 8 – Decent Work & Economic Growth: Industrial food plant design creates employment and improves productivity. SDG 9 – Industry, Innovation & Infrastructure: Promotes modernized, efficient, and innovative food processing infrastructure. SDG 11 – Sustainable Cities & Communities: Waste management and sustainable plant design reduce environmental burdens. SDG 12 – Responsible Consumption & Production: Waste minimization and recycling within food plants.

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7		Instrumentation and Process Control / NPTEL	Dept. Elective-3	SDG 13 – Climate Action: Sustainable equipment design reduces energy footprints and emissions. SDG 3 (Good Health & Well-being): Food quality & safety monitoring. SDG 9 (Industry, Innovation, Infrastructure): Digitalization & automation in processing. SDG 12 (Responsible Consumption & Production): Reduced wastage through precise monitoring. SDG 13 (Climate Action): Energy-efficient process control. SDG 3 – Focus on natural antioxidants and bioactive compounds in spices for promoting health and well-being. SDG 9 – Application of cryogenic grinding, oleoresin extraction, and plantation crop processing supports innovation in food industries. SDG 12 – Promotes sustainable consumption and value-added production from indigenous spice resources. In-depth study of native Indian spices like turmeric, cardamom, ginger, clove, pepper.
8		Spices and Plantation Crops Processing Technology	Dept. Elective-4	SDG 2 – Zero Hunger, SDG 11 – Sustainable Cities & Communities SDG 2 – Zero Hunger, SDG 12 – Responsible Consumption & Production SDG 3 – Good Health & Well-being, SDG 12 – Responsible Consumption & Production SDG 8 – Decent Work & Economic Growth, SDG 9 – Industry, Innovation & Infrastructure, SDG 12 – Responsible Consumption & Production SDG 3 – Good Health & Well-being, SDG 12 – Responsible Consumption & Production SDG 9 – Industry, Innovation & Infrastructure, SDG 12 – Responsible Consumption & Production, SDG 13 – Climate Action
19	25OE311	Indian Traditional Foods	Open Elective-2	SDG 2 – Zero Hunger: Development of affordable bakery and confectionery products that address food security and nutritional needs. SDG 3 – Good Health & Well-being: Formulation of gluten-free, low-fat, and value-
20	25FT312	Bakery and Confectionery Technology	Professional Core-12	

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21	25FT313	Food Safety and Quality Management	Professional Core-13	added bakery products to promote healthier food choices. SDG 8 – Decent Work & Economic Growth: Bakery and confectionery industry as a major sector for employment, entrepreneurship, and small-scale enterprises. SDG 9 – Industry, Innovation & Infrastructure: Adoption of modern equipment, automation, and 3D food printing technologies for product diversification and innovation. SDG 12 – Responsible Consumption & Production: Emphasis on reducing food waste, improving shelf-life, sustainable packaging, and responsible sourcing of raw materials. SDG 17 – Partnerships for the Goals: Collaboration with food industries, regulatory bodies, and research institutions for sustainable growth in bakery and confectionery sectors. SDG 2 – Zero Hunger: Ensuring food safety enhances access to safe, nutritious food. SDG 3 – Good Health & Well-being: Preventing foodborne illnesses and toxins improves public health. SDG 8 – Decent Work & Economic Growth: Standardized safety systems build consumer trust, supporting trade. SDG 9 – Industry, Innovation & Infrastructure: Integration of AI, IoT, and blockchain modernizes the food industry. SDG 12 – Responsible Consumption & Production: Sustainable safety systems reduce contamination and waste. SDG 16 – Peace, Justice & Strong Institutions: Compliance with national and global food laws strengthens governance. SDG 17 – Partnerships for the Goals: Alignment with international standards fosters global collaboration.
22		Food Ethics	Humanities	SDG 2 – Zero Hunger: The syllabus emphasizes Food Security and global food challenges, ethically aligning with ensuring access to sufficient, safe, and nutritious food. Addressing ethical dilemmas around equitable distribution contributes directly to

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23	25FT402	Food Business Management and Entrepreneurship Development	Dept. Elective-5	SDG 2. SDG 3 – Good Health and Well-being: Through case studies on food safety, labeling, packaging, and risk communication, the course upholds ethical practices that safeguard public health, promoting better wellbeing. SDG 12 – Responsible Consumption and Production: Topics like sustainable development, ethical food production, and supply chain ethics emphasize minimizing waste, ensuring transparency, and promoting sustainable consumption behaviors. SDG 16 – Peace, Justice, and Strong Institutions: By focusing on publication ethics, professional codes of ethics, corporate social responsibility, and risk communication, the course nurtures integrity, transparency, and accountability—fundamental to strong systems and institutions. SDG 1 – No Poverty: Promotes livelihood opportunities through food entrepreneurship. SDG 2 – Zero Hunger: Encourages innovation in food processing to improve availability and accessibility. SDG 4 – Quality Education: Builds managerial and entrepreneurial skills in food business. SDG 5 – Gender Equality: Empowers women entrepreneurs through SHGs and PMFME initiatives. SDG 8 – Decent Work & Economic Growth: Enhances employability and start-up culture in the food sector. SDG 9 – Industry, Innovation & Infrastructure: Supports food processing infrastructure and innovative business models. SDG 10 – Reduced Inequalities: Encourages inclusive growth by supporting rural and marginalized entrepreneurs. SDG 11 – Sustainable Cities & Communities: Promotes sustainable food businesses, eco-friendly packaging, and waste management. SDG 12 – Responsible Consumption & Production: Emphasizes circular economy.
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24	Meat, Fish & Poultry Processing Technology	Dept. Elective-6	resource optimization, and reduced food waste. SDG 13 – Climate Action: Advocates sustainable practices like low-carbon processing and green packaging. SDG 17 – Partnerships for the Goals: Strengthens linkages through government schemes, cooperatives, and industry partnerships. SDG 2 – Zero Hunger: Enhances food security by reducing spoilage and developing protein-rich products. SDG 3 – Good Health & Well-being: Ensures safe, nutritious, and hygienic animal-based food products. SDG 8 – Decent Work & Economic Growth: Supports meat, fish, and poultry industries by adding value and creating jobs. SDG 9 – Industry, Innovation & Infrastructure: Introduces modern processing technologies alongside indigenous preservation methods. SDG 12 – Responsible Consumption & Production: Encourages efficient utilization of by-products, reducing waste. SDG 14 – Life Below Water: Promotes sustainable fish processing and utilization of marine resources. SDG 15 – Life on Land: Encourages ethical livestock handling and sustainable poultry practices.
25	25FT816 Beverage Technology / NPTEL	Open Elective-3	SDG 2 – Zero Hunger: Functional beverages (probiotics, whey, soy-based) contribute to nutrition security. SDG 3 – Good Health & Well-being: Probiotic, herbal, and fortified beverages improve human health. SDG 6 – Clean Water & Sanitation: Packaged drinking water production aligns with safe drinking water access. SDG 8 – Decent Work & Economic Growth: Beverage industry growth creates jobs and entrepreneurship opportunities.



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				SDG 9 – Industry, Innovation & Infrastructure: Integration of IoT, AI, nanotechnology, and smart packaging. SDG 12 – Responsible Consumption & Production: Promotes sustainable processing, natural preservatives, and biodegradable packaging. SDG 13 – Climate Action: Sustainable practices in beverage formulation reduce environmental footprint. SDG 15 – Life on Land: Plant-based alternatives reduce livestock pressure and promote resource conservation.
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III. Mapping of R25-C25 Courses with individual SDGs

SDG No.	SDG Name	No. of courses mapped	Percentage of courses mapped
1	No Poverty	1	4%
2	Zero Hunger	18	72%
3	Good Health and Well-Being	20	80%
4	Quality Education	7	28%
5	Gender Equality	2	8%
6	Clean Water and Sanitation	5	20%
7	Affordable and Clean Energy	8	32%
8	Decent Work and Economic Growth	8	32%
9	Industry, Innovation and Infrastructure	21	84%
10	Reduced Inequalities	0	0%
11	Sustainable Cities and Communities	2	8%
12	Responsible Consumption and Production	23	92%
13	Climate Action	7	28%
14	Life Below Water	1	4%
15	Life On Land	1	4%
16	Peace, Justice and Strong Institutions	2	8%
17	Partnerships for the Goals	3	12%

K. Sanyal
Member Secretary

Narain
Chairperson



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APPENDIX - VII

Action Taken Report (ATR) on the suggestions given in earlier BoS meetings

S.No.	Action Point	Response
1.	Certain changes (20%) were proposed by the BoS members in restructuring the subjects in the course structure.	The suggested changes have been incorporated into the revised course structure. Updated syllabi were finalized and approved by the departmental curriculum committee before implementation.
2.	The addition of updated editions of textbooks for courses was suggested by the BoS members.	The latest editions of the recommended textbooks have been included in the revised syllabi for relevant courses, ensuring alignment with current academic and industry standards.


Member Secretary


Chairperson