

**VIGNAN'S**

PROMOTING KNOWLEDGE, TECHNOLOGY & INNOVATION

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 M. Tech-Food Processing Technology on 13-11-2025 from 02.30 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-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODVkJODEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%22%3a%223b0993d8-31db-4db6-b617-64ac193c7ace%22%2c%22Oid%22%3a%226cf5ee25-8b0d-49e3-8d97-74422aa66566%22%7d)

[join/19%3ameeting_ODVkJODEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%22%3a%223b0993d8-31db-4db6-b617-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODVkJODEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%22%3a%223b0993d8-31db-4db6-b617-64ac193c7ace%22%2c%22Oid%22%3a%226cf5ee25-8b0d-49e3-8d97-74422aa66566%22%7d)

[64ac193c7ace%22%2c%22Oid%22%3a%226cf5ee25-8b0d-49e3-8d97-74422aa66566%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODVkJODEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%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 M. Tech., Food Processing Technology Programme for the regulation 2025 (R25-C25).
2. To approve the R25-C25 curriculum, syllabus and assessment schemes of M. Tech., Food Processing Technology Programme and recommend to the Academic council.
3. To Discuss about the SDG and IKS components in the syllabus.
4. To discuss the initiation of PG Diploma in food industry related courses
5. To Review and Approve the Action Taken Report (ATR) on the Suggestions Given in Earlier BoS Meetings

B. Sangeetha K.
Member Secretary

N. Chetan C J
Chairperson



DEPARTMENT OF FOOD TECHNOLOGY

Date: 13-11-2025

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of M. Tech Food Processing Technology program was conducted on 13.11.2025 in online mode from 03.00 PM to 4.00 PM. All the members joined the meeting virtually through the following link:

Join Zoom Meeting

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODVkODEwZDgtMDE0ZS00OGY4LWJmMTgtZGNhZWU2N2QzMWE4%40thread.v2/0?context=%7b%22Tid%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

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 discuss the initiation of PG Diploma in Industry Based Course
6. To Review and Approve the Action Taken Report (ATR) on the Suggestions Given in Earlier BoS Meetings

DEPARTMENT OF FOOD TECHNOLOGY

The following members were present thorough online.

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)	Now
3.	Dr. P. Srinivasa Rao	External Invited Member (Academic)	online
4.	Dr. Chetan C J	External Invited Member (Industry)	online
5.	Dr. S. Karthikeyan	Invited Member (Nominee of the school deam)	Dr. S. Karthikeyan
6.	Dr. Syed Irshaan	Invited Member (Nominee of the deam R & D)	Dr. Syed Irshaan
7.	Dr. Shanker Suwan Singh	Internal Member (Associate Professor)	Dr. Shanker Suwan Singh
8.	Dr. Mrinmoy Roy	Internal Member (Assistant Professor)	Dr. Mrinmoy Roy
9.	Mr. N. Abhilash	Internal Member (Assistant Professor)	Mr. N. Abhilash
10.	Mr. Sumit Gawai	Internal Member (Assistant Professor)	Mr. Sumit Gawai
11.	Dr. Sangeetha K	Member Secretary	Dr. Sangeetha K

Chairperson Dr. T. Ramesh Babu, Dean, School of Agriculture and Food Technology, VFSTR 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 honourable exit.

The following points were discussed in the BoS meeting:

1. Presentation of the R25 M. Tech FPT curriculum structure, including pre-semester orientation, credit distribution, L-T-P structure, and inclusion of self-learning hours
2. Finalization of the curriculum structure, including credits and L-T-P-SL distribution.
3. Review and approval of Department Elective Courses and specialization streams.
4. Discussed on inclusion of Creative Work-in-Lieu of Course Work.
5. Discussion on M. Tech student internship structure and updates.
6. NPTEL courses (minimum 12 credits) for additional add-on certification.
7. Review of skill-development, employability, and entrepreneurship-oriented courses mapped in the curriculum. Discussed the action taken report from previous BoS meeting.
8. Review of changes made from R20/C24 to R25/C25 of M. Tech FPT syllabus, with emphasis on <10% modifications aligned with industry needs and modern technologies.
9. Review on additional units incorporation to increase application-based and industry-oriented learning.
10. Discussion on integration of SDG (Sustainable Development Goals) and IKS (Indian Knowledge Systems) components across the syllabus.
11. Review of textbook and reference book updates.

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12. Discussion on assessment pattern changes under R25, including revised Formative and Summative Assessment structure.
13. Discussed the PEOs, PSOs, and POs of the M. Tech Food Processing Technology programme.
14. Discussion on the initiation of PG Diploma in Industry-Based Course
15. Discussed the action taken report from previous BoS meeting.

The following are the observations:

1. Minor restructuring has been carried out in the curriculum to support continuous learning and continuous assessment through a module-based structure.
2. The curriculum remains predominantly skill-oriented with strong emphasis on employability and industry readiness.
3. Majority of the courses are well aligned with IKS (Indian Knowledge Systems) and SDG (Sustainable Development Goals) components.
4. A need was identified to strengthen students' exposure to regulatory and compliance frameworks relevant to the food industry.
5. Students require enhanced training in computational and simulation tools to meet current industrial standards and expectations.
6. There is a need to integrate concepts related to seasoning technology, waste management and energy engineering to enhance sustainability-focused learning.
7. The number of students opting for project-based thesis submission needs to be increased through appropriate encouragement and guidance.
8. The proposed PG Diploma course title requires minor refinement for clarity and industry relevance.

The following improvements are suggested: (Action Points)

1. The Food Licensing and Registration System course should be offered as a Professional Core rather than a Departmental Elective, with greater emphasis on food regulation.
2. Suggested to incorporate concepts of seasoning technology, waste management and energy engineering under relevant subjects to address industry requirements.
3. Recommended to strengthen the use of computational tools for process modelling and simulation within the curriculum.
4. Suggested to encourage the project-based thesis submission among students
5. Suggested to include Food Safety Standards as a component in the PG Diploma course.

The following recommendations and approvals are made after the discussion:

1. The BoS members approved the revised regulations, curriculum structure, syllabus, and assessment schemes of the M. Tech Food Processing Technology Programme, aligned with the NEP 2020 framework.
2. The list of Department Elective Courses for the M. Tech Food Processing Technology Programme under Regulation R25–C25 was approved.

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3. Approval of the <10% syllabus revisions made while transitioning from R20/C24 to C25, with specific focus on modernization and inclusion of relevant technologies.
4. The Work-in-Lieu course structure was reviewed and appreciated, acknowledging its role in promoting research-oriented learning and practical skill development.
5. NPTEL courses are approved for the Academic Year 2025-26.
6. Approval of the skill-development, employability, and entrepreneurship-oriented course mapping, ensuring alignment with current industry expectations.
7. Approval to formally integrate SDG and IKS components across the curriculum, with clear justification and mapping at course level.
8. Approval of updated textbook and reference lists, ensuring all courses incorporate the latest editions and contemporary sources
9. The refined PEOs, PSOs, and POs of the M. Tech Food Processing Technology programme were reviewed and approved.
10. Initiation of PG Diploma in Industry Based Course such as food regulation and safety management, food and agribusiness management, Beverage technology and dairy technology approved.
11. 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

DEPARTMENT OF FOOD TECHNOLOGY

E-mail confirmation and Geo tagged photos

Board of Studies (BoS) Meeting - Circular and Syllabus Documents for Confirmation (3 Summaries)

Reply Reply all Forward

Dr. Sanya Chakraborty <dschiv@gmail.com>
To: Board of Academics, FT
Thu 11/11/2023 11:11 AM

received. I would attend, thanks.

Dr. Ch. V. V. Satyanarayana, M.Tech (BT, IGP), PhD (Massey, NZ)

FIASAE

Former Associate Dean, Senior Professor & University Head, Dept. of

Food Engineering (Retired)

Dr NTR College of Food Science & Technology

Acharya N G Ranga Agril. University

Bapatla Campus-522101, Guntur District, A.P.

India,

Mobile:9949976727

Board of Studies of Food Technology

12 November 2023 10:42 - 10:55



Board of Studies (BoS) Meeting - Circular and Syllabus Documents for Confirmation (3 Summaries)

Dr. Pasupati Srinivasa Rao <psrao@iitk.ac.in>
To: Board of Academics, FT
Cc: dschiv@gmail.com, +4 others
Dear Dr Sangeetha

Thanks for the mail and I confirm my participation.

Best regards,

Dr. P. Srinivasa Rao

Professor

Agricultural and Food Engineering Department

Indian Institute of Technology Kharagpur,

West Bengal, India, 721302.

Contact: 91-3222-283164 (P) 283163 (R)



Board of Studies (BoS) Meeting - Circular and Syllabus Documents for Confirmation (3 Summaries)

Chetan C.J <chetan@cj@gmail.com>
To: Board of Academics, FT
Thu 11/11/2023 10:21 AM

Dear Sir/Madam,

It is indeed a pleasure to be a part of this scheduled meeting.

Thanks With Best Regards,

Dr. Chetan C.J

Co-Founder and Director

CA Group (CA Engineering Solutions & CA Nutri Labs)

Cell: 9971231652





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FOUNDED FOR SERVICE, TECHNOLOGY & RESEARCH

COMMITMENT TO EXCELLENCE - THE SPIRIT OF VIGNAN FUELS IT!!

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Appendix index

1. R25-C25 curriculum structure including list of professional cores, department elective, NPTEL courses of M. Tech Food Processing 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

M. Tech Food Processing Technology: Curriculum Structure –R25

R25-C25 curriculum structure including list of professional cores, department elective, NPTEL courses of M. Tech Food Processing Technology programme.

Date: 13.11.2025

Pre - Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
25SAB101	Orientation Session	0	2	0	0	1	Binary graded
25AMB101	IT workshop and cyber security	0	0	2	0	1	Binary graded
	Total					2	

I Year I Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
25FTB101	Advances in Food Engineering	2	2	2	2	4	Professional Core
25FTB102	Advances in Food Technology	2	2	2	2	4	Professional Core
25FTB103	Process Simulation and Optimization	2	2	2	2	4	Professional Core
25FTB801	Food Licensing and Registration system (DE -I)	2	2	2	2	4	Elective
25FTB104	Teaching Assistantship	0	0	2	0	1	Binary graded
25ENB101	Indian Knowledge System	0	2	0	0	1	Binary graded
25FTB109	Work-in-lieu of a course*					2	Elective & Floating Credit
	Sub Total					20	
	Add on course -I	2	0	2	2	3	
	Total					23	

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I Year II Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	New product development	2	2	2	2	4	Professional Core
	Novel Packaging Technology	2	2	2	2	4	Professional Core
	Novel separation Processes (DE - 2)	2	2	2	2	4	Elective
	Processing of high value commercial Food crops (DE - 3)	2	2	2	2	4	Elective
	Research Methodology & IPR	1	2	0	1	2	Interdisciplinary
	Interdepartmental Project	0	0	2	0	1	Project
25FTB104	Teaching Assistantship	0	0	2	0	1	Binary graded
	Sub Total					20	
	Add on course -2	2	0	2	2	3	
	Total					23	

II Year I Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	Project/Internship	0	2	24	0	13	Project
	Sub Total					13	
	Add on course -3 (MOOCs Course)	3	0	0	3	3	
	Total					16	

II Year II Semester

Course Code	Title of the course	L	T	P	SL	C	Course type
	Project/Internship	0	2	24	0	13	Project
	Sub Total					13	
	Add on course -4 (MOOCs Course)	3	0	0	3	3	
	Total					16	

Depa

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List of Add on -SWAYAM - NPTEL Courses

Stream	No	Course Title	L T P S L C	
Food Engineering	1	Thermal processing	2 2 2 2 4	
	2	Non thermal processing	2 2 2 2 4	
	3	Novel separation Processes (D2)	2 2 2 2 4	
	4	Process scale up	2 2 2 2 4	
Food Technology	1	Retort Processing	2 2 2 2 4	
	2	Processing of high value commercial Food crops (D3)	2 2 2 2 4	
	3	Flavor Technology	2 2 2 2 4	
	4	Extrusion Technology and Engineering	2 2 2 2 4	
Food Safety and Quality assurance	1	Emerging Technologies in Food Safety and Quality	3 2 0 2 4	
	2	Food Licensing and Registration System (D1)	3 2 0 2 4	
	3	Food Safety and Quality Standards	3 2 0 2 4	
	4	Traceability and Recall in Food System	3 2 0 2 4	
Food Business Management	1	Entrepreneurship in Food Industries	3 2 0 2 4	
	2	Food Supply Chain Management	3 2 0 2 4	
	3	Food Economics	3 2 0 2 4	
	4	Human Resource Management	3 2 0 2 4	
IT Applications	1	Robotics & Computer Controlled Machines	3 2 0 1 4	
	2	Internet of Things and Smart Automation In Food Processing	3 2 0 2 4	
	3	IT in Food Processing	3 2 0 2 4	
	4	AI & ML in Food Processing	3 2 0 2 4	
S.No	Course Code	Course Name	NPTEL Course Offered by	Credits
1.	NOC25_AG01	Dairy and Food Process and Products Technology	IIT, Kharagpur	3
2.	NOC25_AG19	Food Oils and Fats: Chemistry And Technology	IIT, Kharagpur	3
3.	NOC25_AG03	Novel Technologies for Food Processing and Shelf-Life Extension	IIT, Kharagpur	3
4.	NOC25_AG05	Cooling Technology: Why and How utilized in Food Processing and allied Industries	IIT, Kharagpur	3
	NOC24_AG06	Impact of Flow of Fluids in Food Processing	IIT, Kharagpur	3



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6.	NOC25_CE109	Municipal Solid Waste Management (Open Electives)	IIT Guwahati	3
7.	NOC25_AG20	Irrigation and Drainage (Open Electives)	IIT, Kharagpur	3

V. Sanyal
Member Secretary

Nay
Chairperson

DEPARTMENT OF FOOD TECHNOLOGY

APPENDIX - II

List of Courses that Enables Employability or Entrepreneurship or Skill Development

S. No	Course Code	Course Title	Course Category	Year of Introduction	Selected Category (Only One)	Justification
1	25SAB101	Orientation Session	Pre-Semester	2022	Skill Development	Builds communication, team interaction, and academic readiness.
2	25AMB101	IT Workshop & Cyber Security	Pre-Semester	2022	Skill Development	Enhances digital literacy and cybersecurity handling skills.
3	25FTB101	Advances in Food Engineering	Professional Core	2022	Skill Development	Provides engineering, modelling and process operation skills needed in food plants.
4	25FTB102	Advances in Food Technology	Professional Core	2022	Skill Development	Supports innovation in functional foods, value-added products and start-up creation.
5	25FTB103	Process Simulation & Optimization	Professional Core	2022	Skill Development	Builds software, modelling, analytical and optimization competencies for industry roles.
6	25FTB104	Teaching Assistantship	Binary	2022	Skill Development	Enhances teaching, communication, and leadership abilities.
7	25ENB101	Indian Knowledge System	Binary	2022	Skill Development	Encourages understanding of traditional practices for sustainable innovations.
8		New Product Development	Professional Core	2022	Entrepreneurship	Strengthens skills in ideation, formulation, sensory evaluation and product commercialization.
9		Novel Packaging Technology	Professional Core	2022	Employability	Provides technical skills in active, intelligent and biodegradable packaging for packaging industries.
10		Research Methodology & IPR	Interdisciplinary	2022	Skill Development	Improves research design, data analysis and patent-related competencies.
11		Interdepartmental	Project	2022	Skill Development	Builds multi-disciplinary problem solving

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Project				and project handling abilities.	
Sl. No.	Project	Department Elective	Year	Skill Development	Outcomes
12	Thermal Processing	Department Elective	2022	Skill Development	Develops heat processing, retort operation, and thermal validation skills for food industries.
13	Non-Thermal Processing	Department Elective	2022	Skill Development	Trains students in HPP, PEF, UV, plasma operations needed in modern food industries.
14	Novel Separation Processes	Department Elective	2022	Skill Development	Supports development of essential oils, nutraceuticals, and extraction-based startups.
15	Process Scale-Up	Department Elective	2022	Entrepreneurship	Develops capability to scale processes for commercial production, enabling industry-oriented business establishment
16	Retort Processing	Department Elective	2022	Employability	Trains students in RTE product sterilization, F0 calculation, and retort operations.
17	Processing of High Value Commercial Crops	Department Elective	2022	Entrepreneurship	Enables spice, tea, coffee, and cocoa-based business development.
18	Flavour Technology	Department Elective	2022	Skill Development	Prepares students for flavour development, evaluation, and sensory industries.
19	Extrusion Technology	Department Elective	2022	Entrepreneurship	Builds operational skills needed in cereal, snack and protein product industries.
20	Emerging Technologies in Food Safety	Department Elective	2022	Employability	Enhances rapid testing, safety auditing, and quality assessment skills.
21	Food Licensing & Registration System	Department Elective	2022	Entrepreneurship	Helps in establishing new food businesses through licensing and regulatory knowledge.
22	Food Safety & Quality Standards	Department Elective	2022	Employability	Strengthens HACCP, ISO, and auditing skills for QA/QC roles.
23	Traceability &	Department	2022	Employability	Develops digital traceability, tracking and

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	Recall in Food Systems	Elective		recall management competencies.
24	Entrepreneurship in Food Industries	Department Elective	2022	Builds business planning, costing, and food start-up management skills.
25	Food Supply Chain Management	Department Elective	2022	Provides logistics, cold chain, procurement and distribution skills.
26	Food Economics	Department Elective	2022	Enhances costing, pricing, and economic analysis abilities.
27	Human Resource Management	Department Elective	2022	Builds leadership, negotiation, and organizational management skills.
28	Robotics & Computer-Controlled Machines	Department Elective	2022	Trains students in automation and robotics relevant for food processing plants.
29	IoT & Smart Automation	Department Elective	2022	Provides skills in sensor integration, monitoring, and digital automation.
30	IT in Food Processing	Department Elective	2022	Enhances data management, process digitalization, and IT-based control skills.
31	AI & ML in Food Processing	Department Elective	2022	Builds AI-based decision, predictive modelling, and quality prediction skills.
32	Project / Internship (III Sem)	Project	2022	Strengthens practical exposure, industrial problem solving, and experimentation skills.
33	Project / Internship (IV Sem)	Project	2022	Supports prototype development, innovation, and commercialization readiness.
34	Add-on MOOCs (SWAYAM / NPTEL)	MOOC	2022	Adds specialized technical skills with national-level certifications.

Nandini
Chairperson

K. Suresh
Member Secretary

DEPARTMENT OF FOOD TECHNOLOGY

APPENDIX - III

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

S. No	Course Code	Course Title	Course Category	% of Changes	Justification for the Changes
1	25SAB101	Orientation Session	Pre-Semester	5%	Minor restructuring to align with PG induction requirements.
2	25AMB101	IT Workshop & Cyber Security	Pre-Semester	8%	Updated content to include latest digital tools and cyber safety modules.
3	25FTB101	Advances in Food Engineering	Professional Core	7%	Course refined to reflect updated processing technologies and modelling approaches.
4	25FTB102	Advances in Food Technology	Professional Core	6%	Incorporated recent advancements in food processing and functional food concepts.
5	25FTB103	Process Simulation & Optimization	Professional Core	8%	Added modern simulation tools and optimization techniques to improve analytical skills.
7	25ENB101	Indian Knowledge System	Binary	5%	Minor revisions to include food-related traditional knowledge components.
8		New Product Development	Professional Core	9%	Updated with recent food innovation and market-driven product development strategies.
9		Novel Packaging Technology	Professional Core	7%	Content enhanced to include latest sustainable and intelligent packaging trends.
10		Research Methodology & IPR	Interdisciplinary	6%	Revised to meet current research practices and updated IPR guidelines.
12		Thermal Processing	Department Elective	8%	Updated examples and case studies to reflect modern industrial thermal practices.
13		Non-Thermal Processing	Department Elective	9%	Included recent non-thermal technologies such as cold plasma and UV-C.
14		Novel Separation Processes	Department	7%	Enhanced with updated extraction techniques and

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			Elective		membrane technologies.
15		Process Scale-Up	Department Elective	6%	Updated scaling models and industrial case applications for better relevance.
16		Retort Processing	Department Elective	8%	Revised content to align with current RTE product sterilization standards.
17		Processing of High Value Commercial Crops	Department Elective	7%	Updated processing techniques relevant to spices, tea, coffee, and cocoa industries.
18		Flavour Technology	Department Elective	6%	Included latest flavour extraction and formulation technologies.
19		Extrusion Technology	Department Elective	9%	Updated to reflect emerging extrusion applications and product innovations.
20		Emerging Technologies in Food Safety	Department Elective	8%	Added recent advancements in rapid testing and safety evaluation tools.
21		Food Licensing & Registration System	Department Elective	7%	Updated modules based on recent FSSAI regulatory changes.
22		Food Safety & Quality Standards	Department Elective	6%	Refined to include updates in HACCP, ISO, and global quality standards.
23		Traceability & Recall in Food Systems	Department Elective	8%	Enhanced with modern digital traceability and recall management practices.
24		Entrepreneurship in Food Industries	Department Elective	9%	Updated business models and startup-focused content to support entrepreneurship.
25		Food Supply Chain Management	Department Elective	7%	Included latest logistics, cold chain, and digital supply chain practices.
26		Food Economics	Department Elective	5%	Minor updates to costing, pricing and economic analysis sections.
27		Human Resource Management	Department Elective	6%	Updated with industry-oriented HR skills and leadership components.
28		Robotics & Computer-Controlled Machines	Department Elective	9%	Revised to reflect automation and Industry 4.0 advancements in food plants.



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	IoT & Smart Automation	Department Elective	8%	Enhanced with modern IoT integration, sensors, and automation applications.
	IT in Food Processing	Department Elective	6%	Updated digital tools, documentation systems, and IT-enabled processing concepts.
	AI & ML in Food Processing	Department Elective	9%	Added emerging AI/ML applications for quality prediction and process optimization.

K. Sankar
Member Secretary

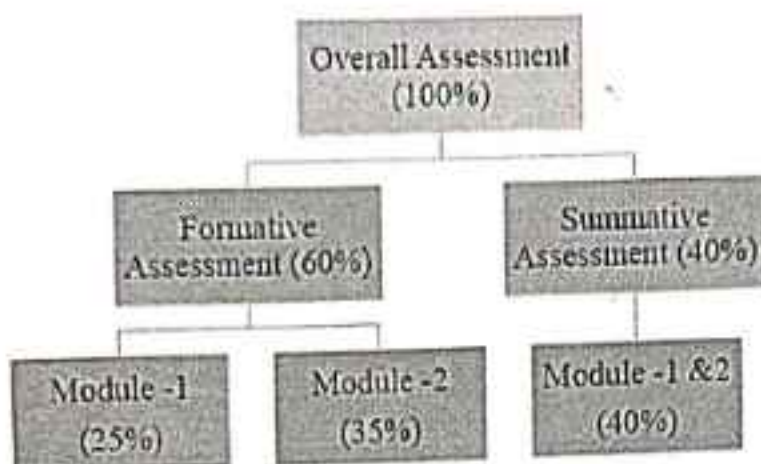
N. Sankar
Chairperson

DEPARTMENT OF FOOD TECHNOLOGY

APPENDIX IV

Revised formative Assessment schemes – R25

Formative question paper Structure and Marks Distribution:



- i) The total marks for module-1 is 50 – Pre-T1 (10), T1 (30) and T5 (10)
- j) The total marks for module-2 is 70 - Pre-T1 (10), T1 (20), T2 (5), T3 (5), T4 (10) and T5 (20).

Formative question paper Structure and Marks Distribution:

VFSTR: VADLAMUDI
(Dedicated to be UNIVERSITY)
Office of Deans - Academic, Assessment and Awards

Date: 23/09/2023

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 3rd Week)	6 Marks (mid of 3rd Week)	2Qs+5M= 10 Marks Scale down to 6 Marks	1 & 2
Target-1	20 Marks (10 Marks (10+20/3= 30 M) (Mid of 5th Week)	8 Marks (4 Marks (4+4= 8 M) (End of 5th Week)	8 Marks (4 Marks (4+4= 8 M) (End of 5th Week)	2Qs+10M= 20 Marks Scale down to 8 Marks	2, 3 & 4
Target-2	10 Marks (2 Reviews)	5 Marks (T2)	5 Marks (T2)	5 Marks Scaled down to 3 Marks	3, 4 & 5
Target-3	10 Marks (2 Reviews) (end of 7th Week)	5 Marks (T3) (IEEE/APA format Only 1 Review) (end of 7th Week)	5 Marks (T3) (Value based Presentation Only 1 Review) (end of 7th Week)	5 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) 3Qs+5M= 15 Marks 2) 10Qs+5M= 5 Marks	3, 4 & 5
Target-5	20 Marks	20 Marks	20 Marks	20 Marks	3, 4 & 5
Total	60 Marks	60 Marks	60 Marks		



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Summative question paper Structure and Marks Distribution:

- i. 15 (P) + 25 (L) marks format (L+P or L+T+P courses).
- ii. 20 (P) + 20 (L) marks format.
- iii. 40 marks format (L+T courses).

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%).

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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 (%)
Professional Core (PC)	5	5	75%
Interdisciplinary Course (IDC)	1	1	60%
Department Electives (DE)	21	20	75%
TOTAL	27	27	100%

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

IKS Components Incorporated

S. No	Course Code	Course Title	Course Category	Module / Unit	Refractance window drying (<i>Pratibimba-śoṣaṇa</i>); heat penetration (<i>Uṣma-PraveśaGatit</i>); dielectric properties (<i>Vidyut-PratighātaGuṇaḥ</i>), pulsed electric field (PEF) (<i>Vidyut-Spandana Prakriyā</i>), heat transfer (<i>Uṣma-saṅkramaṇa</i>), Sterility Value (SV) (<i>Nirmalatā-Mālya</i>), momentum transfer (<i>Gati-śakti-saṅkramaṇa</i>), Mathematical modeling (<i>Gaṇita-MātrikāNirūpaṇa</i>); freeze concentration(<i>Hima-Ghana-Kendrikaraṇa</i>), osmotic dehydration (<i>Āvayava-Śoṣaṇa / ĀsmosikaŚoṣaṇa</i>), ultrasound-assisted extraction(<i>Śabda-SpandaNiskaraṇa</i>), cryogenic grinding(<i>Hima-Piṣṭi / ŚītaPiṣaṇa</i>), water optimization(<i>Jala-Saṅrakṣaṇa / JalopavogaNiyamaṇa</i>), Turbo milling(<i>Tvarita Piṣaṇa</i>), extractive milling(<i>NiskaraṇaPiṣaṇa</i>), micronization(<i>Sākṣma-Kaṅṭharaṇa</i>), supercritical fluid extraction(<i>Ati-Samāhita Dravya Niskaraṇa</i>), ready-to-eat (<i>Sajjīkaraṇa-ĀhāraBhojya</i>), Cryogenic grinding(<i>Śīta-Piṣaṇa</i>) , encapsulation(<i>ĀvaraṇaSaṅrakṣaṇa</i>), RTE meat products(<i>TatkṣaṇaBhojyaMāṇsa</i>), regulatory aspects(<i>Niyama-Nīti / Saṁsthā-Paddhati</i>).
1	25FTB101	Advances in Food Engineering	Professional Core	M1, M2	
2	25FTB102	Advances in Food Technology	Professional Core	M1, M2	
3	25FTB103	Process Simulation & Optimization	Professional Core	M1, M2	Mass transfer operations(<i>Rasa Saṁcāra, DhātuPariṇāma</i>), empirical(<i>PratyakṣaJñāna, Anubhava</i>), semi-empirical models(<i>Yukti-misraJñāna</i>), Monte Carlo method(<i>Samabhāvanā Gaṇita</i>), statistical optimization(<i>SāṁkhyāGaṇita, Samanvaya Vidhī</i>), evolutionary computation(<i>Prakṛti-VikṛtiSiddhānta</i>), osmotic dehydration(<i>Avashoshana</i>), Life Cycle Assessment (LCA)(<i>Pañca-Mahābhūta-Sāmya</i>).
5	—	New Product Development	Professional Core	M1, M2	Product development(<i>Utpadana</i>), feasibility analysis(<i>Yukti-Parīkṣā</i>); product positioning(<i>Nīti-Yojanā</i>); primary processing considerations(<i>Prathamā-Samskāra</i>), certifications(<i>Pramāṇa-Pātra</i>), feasibility studies(<i>Yukti-Parīkṣā</i>), consumer research(<i>Bhoktṛ-Parīkṣaṇa</i>), market trends(<i>Vyāpāra-Pravṛtti</i>); Process standardization(<i>Sthirīkaraṇa</i>); health-oriented(<i>Ārogya-Kendra Utpadana</i>).
6	—	Novel Packaging	Professional	M1, M2	Retort packaging materials (<i>Uṣma-SaṅrakṣaṇaPeṭikā</i>); Active Packaging

Technology	Core		
Thermal Processing	Department Elective	M1, M2	
Non-Thermal Processing	Department Elective	M1, M2	
Novel Separation Processes	Department Elective	M1, M2	
Process Scale-Up	Department Elective	M1, M2	
Retort Processing	Department Elective	M1-M2	
Processing of High Value Commercial Crops	Department Elective	M1, M2	
Flavour Technology	Department Elective	M1, M2	

DEPARTMENT OF FOOD

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[Signature]
Chairperson

P. B. B. B.
Member Secretary



VIGNAN'S

FOUNDATION FOR BUSINESS, TECHNOLOGY & RESEARCH

COMMITMENT TO EXCELLENCE IN EDUCATION & RESEARCH

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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 (%)
Professional Core (PC)	5	5	100%
Interdisciplinary Course	1	1	100%
Department Electives (DE)	21	21	100%
TOTAL	27	27	100%

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

SDG Justification			SDG Justification	
S. No.	Course Code	Course Title	Course Category	SDG Justification
1	25FTB101	Advances in Food Engineering	Professional Core	SDG 2 – Novel thermal and non-thermal processing technologies enhance food preservation, reduce post-harvest losses, and improve food availability. SDG 3 –Focus on nutrient retention, microbial safety, and quality assurance and processed foods. SDG 7 –Emphasis on energy-efficient heat and mass transfer operations and sustainable food processing methods. SDG 9 –Integration of smart food engineering equipment, IoT-based monitoring, and innovative process optimization to promote industrial growth. SDG 12 –Fortification and biofortification enhance food and nutrient security. SDG 13 –Functional foods and nutraceuticals help manage lifestyle diseases. SDG 14 –Cryogenic grinding, supercritical extraction, and HPP promote innovation. SDG 15 –Minimal processing, cold-pressed oils, and sustainable packaging. SDG 16 Simulation and optimization help reduce post-harvest losses and improve food availability. SDG 17 Optimization ensures nutrient retention and microbial safety in processed foods. SDG 18 Energy-efficient process simulation and optimization reduce energy consumption. SDG 19 Smart process design, IoT, and AI-based optimization promote industrial innovation.
2	25FTB102	Advances in Food Technology	Professional Core	SDG 2 –Development of nutrient-rich, fortified, and functional foods to combat malnutrition. SDG 3 –Promotion of health-oriented and functional food products. SDG 9 –Focus on innovative product design and sustainable packaging. SDG 12 –Ethical sourcing, reformulation, and shelf-life optimization to reduce food waste.
3	25FTB103	Process Simulation & Optimization	Professional Core	
5	-	New Product Development	Professional Core	

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	Novel Packaging Technology	Professional Core	
6			SDG 3 –Enhances safety and shelf-life of food via antimicrobial, intelligent, and active packaging. SDG 9 –Involves nanocomposite, bio-nano materials, MAP, and TTIs for food system innovations. SDG 12 –Emphasizes recyclable, biodegradable, and edible packaging systems. SDG 13 –Encourages sustainable, eco-friendly packaging alternatives to reduce environmental footprint.
8	Thermal Processing	Department Elective	SDG 2: Reduces food loss and ensures availability through shelf-life extension. SDG 3: Enhances food safety through effective microbial inactivation. SDG 7: Promotes energy-efficient thermal processing systems. SDG 9: Strengthens industrial innovation in thermal process technologies.
9	Non-Thermal Processing	Department Elective	SDG 2 –Supports food security by extending shelf life and maintaining nutrient quality. SDG 3 –Promotes safe, minimally processed foods retaining bioactive compounds. SDG 9 –Encourages adoption of energy-efficient and automated technologies. SDG 12 –Advances clean, eco-friendly processing technologies reducing energy footprint.
10	Novel Separation Processes	Department Elective	SDG 3 –Recovery of bioactive compounds for functional and nutraceutical foods. SDG 6 –Membrane and ion-exchange techniques for effluent treatment. SDG 9 –Innovation in separation and extraction technologies. SDG 12 –Promotion of green and sustainable extraction processes.
11	Process Scale-Up	Department Elective	SDG 2 –Enhances productivity and food availability through efficient scaling of manufacturing systems. SDG 3 –Ensures safety and quality consistency during industrial upscaling. SDG 9 –Promotes technological advancement, modeling, and automation in industrial scale-up. SDG 12 –Encourages sustainable scaling with minimal waste and energy optimization.
12	Retort Processing	Department Elective	SDG 2 –Supports long shelf-life meal production for emergency and defense food supply. SDG 3 –Promotes safe, nutritious ready-to-eat foods with extended stability.

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			SDG 9 –Encourages modernization and automation in food preservation systems. SDG 12 –Emphasizes sustainable packaging and reduced food waste.
13	–	Processing of High Value Commercial Crops	Department Elective SDG 2 –Promotion of value-added, nutrient-dense commercial crop-based products (e.g., fortified coconut, cashew, and cocoa products) to improve food security and reduce malnutrition. SDG 3 –Development of bioactive-rich functional foods (ginger oleoresins, turmeric curcumin concentrates, polyphenol-rich teas) for improving public health and preventing lifestyle-related disorders. SDG 8 – Enhancement of processing technologies and value addition in plantation crops to boost rural entrepreneurship, employment generation, and export markets. SDG 9 –Adoption of innovative techniques such as cold plasma decontamination, supercritical CO₂ extraction, and cryogenic grinding to strengthen industrial food processing infrastructure. SDG 12 –Sustainable utilization of by-products (coffee pulp, tea waste, turmeric peels) for bioactive extraction and development of eco-friendly packaging solutions, minimizing post-harvest losses and food waste.
14	–	Flavour Technology	Department Elective SDG 2 –Enhances sensory appeal and acceptance of nutritious foods. SDG 3 –Promotes development of health-based flavor systems for functional foods. SDG 9 –Supports innovation in natural flavor extraction and encapsulation technologies. SDG 12 –Encourages clean-label and sustainable flavor sourcing.
15	–	Extrusion Technology	Department Elective SDG 2 –Enhances food security by producing shelf-stable, nutritious, and fortified extrudates. SDG 3 –Enables development of low-fat, high-fiber, and protein-enriched functional foods. SDG 9 –Promotes automation, energy-efficient machinery, and innovative snack technologies. SDG 12 –Encourages utilization of agro-residues and by-products in extruded products.
16	–	Emerging Technologies	Department SDG 2 –Ensuring safe and authentic nutrient-rich foods by detecting adulterants

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	In Food Safety	Elective	and contaminants. SDG 3 – Reducing foodborne illnesses through advanced detection of pathogens, pesticides, and toxic metals. SDG 9 – Promoting the use of modern analytical instrumentation and rapid biosensors for industrial food safety compliance. SDG 12 – Supporting sustainable and transparent food processing practices by enabling authenticity testing and traceability.
17	Food Licensing & Registration System	Department Elective	SDG 2 – Safe licensing ensures availability of hygienic, nutritious food for all. SDG 3 – Prevents sale of unsafe or misbranded food through robust licensing & testing. SDG 8 – Facilitates fair trade & regulatory compliance for small/micro food enterprises. SDG 9 – Encourages digital licensing innovations, improving food safety infrastructure. SDG 12 – Promotes transparent traceability, reduces food fraud, and minimizes wastage.
18	Food Safety & Quality Standards	Department Elective	SDG 2 – Ensuring food safety enhances access to safe, nutritious food. SDG 3 – Preventing foodborne illnesses and toxins improves public health. SDG 8 – Standardized safety systems build consumer trust, supporting trade. SDG 9 – Integration of AI, IoT, and blockchain modernizes the food industry. SDG 12 – Sustainable safety systems reduce contamination and waste. SDG 16 – Compliance with national and global food laws strengthens governance. SDG 17 – Alignment with international standards fosters global collaboration.
19	Traceability & Recall in Food Systems	Department Elective	SDG 2 – Promotes safe, traceable food supply, reducing risks of unsafe food distribution. SDG 3 – Ensures rapid recall of unsafe food, minimizing foodborne illnesses. SDG 8 – Enhances global trade confidence by ensuring food safety compliance. SDG 9 – Integrates Blockchain, RFID, and IoT for digital food traceability. SDG 12 – Promotes transparency, ethical sourcing, and waste reduction through efficient recalls.
20	Entrepreneurship in Food Industries	Department Elective	SDG 1 – Promotion of food-based rural entrepreneurship creates livelihood opportunities, reduces poverty, and supports self-reliant

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			communities. SDG 2 –Development of food processing enterprises minimizes post-harvest losses, enhances food value addition, and ensures food availability throughout the year. SDG 5 –Focus on women empowerment through food entrepreneurship enables economic inclusion and leadership opportunities for women in rural and urban areas. SDG 9 –Promotes establishment of food processing units, agri-startups, incubation centers, and adoption of innovative technologies under MSME and PMFME schemes.
21	Food Supply Chain Management	Department Elective	SDG 2 –By managing procurement, warehousing, distribution and cold-chain logistics efficiently, food supply chains can reduce post-harvest losses, improve availability and accessibility of nutritious food. SDG 9 –The modules on IT (ERP, RFID, IoT, blockchain), packaging innovation, cold chain infrastructure directly supports resilient industry, infrastructure and innovation in food supply chains. SDG 17 –International transport, global logistics networks, export/import documentation, and supply chain collaboration emphasize partnerships across borders, sectors and stakeholders.
22	Food Economics	Department Elective	SDG 1 –Promotes inclusive economic models ensuring income security for smallholders and processors. SDG 2 –Strengthens food value chains and reduces food losses through economic efficiency. SDG 8 –Encourages entrepreneurship and employment generation in the food sector. SDG 9 –Supports sustainable industrialization through technological investments. SDG 12 –Promotes efficient resource use and waste reduction in production economics.
23	Human Resource Management	Department Elective	SDG 3 –Promotes employee safety, mental wellness, and balanced work environments. SDG 5 –Encourages inclusive HR practices ensuring equal opportunities in the

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				Food sector.
				SDG 8 –Supports labor welfare, fair compensation, and workforce development. SDG 9 –Enhances organizational innovation through skill development and leadership. SDG 12 –Promotes responsible leadership and sustainable workplace ethics.
24	–	Robotics & Computer- Controlled Machines	Department Elective	SDG 8 –Encourages safe and productive employment through robotics in food industries. SDG 9 –Promotes automation and smart technologies to enhance industrial efficiency. SDG 12 –Supports sustainable automation to reduce food waste and energy use.
25	–	IoT & Smart Automation	Department Elective	SDG 2 –Enables safe, traceable, and efficient food production through smart monitoring. SDG 3: Promotes detection of food adulteration for consumer health protection. SDG 9 –Strengthens digital and automated infrastructure for the food sector. SDG 12 –Reduces waste and ensures process efficiency through real-time data.
26	–	IT in Food Processing	Department Elective	SDG 2 –Enhances food security through digital process control and data-driven production. SDG 3 –Ensures traceable, safe, and high-quality food through IT-enabled monitoring. SDG 9 –Promotes smart and automated infrastructure in food processing. SDG 12 –Reduces waste and enhances energy efficiency through IT-based analytics.
27	–	AI & ML in Food Processing	Department Elective	SDG 2: Ensures food availability through waste reduction & predictive quality systems. SDG 3: Supports safe foods through contamination detection and monitoring. SDG 9: Drives industrial innovation and smart manufacturing. SDG 12: Enables sustainable production and reduces losses through process optimization.

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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	2	7.4%
2	Zero Hunger	4	14.8%
3	Good Health and Well-Being	7	25.9%
4	Quality Education	2	7.4%
5	Gender Equality	0	0%
6	Clean Water & Sanitation	0	0%
7	Affordable & Clean Energy	2	7.4%
8	Decent Work & Economic Growth	5	18.5%
9	Industry, Innovation & Infrastructure	13	48.1%
10	Reduced Inequalities	0	0%
11	Sustainable Cities & Communities	1	3.7%
12	Responsible Consumption & Production	11	40.7%
13	Climate Action	3	11.1%
14	Life Below Water	0	0%
15	Life on Land	0	0%
16	Peace, Justice & Strong Institutions	2	7.4%
17	Partnerships for the Goals	0	0%


Member Secretary


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 (up to 10%) were proposed by the BoS members in restructuring the subjects in the course structure.	All recommendations within the permitted 10% revision limit have been incorporated. Course content, module sequencing, and outcome alignment were refined as per BoS suggestions without altering the overall structure.
2	The addition of updated editions of textbooks for courses was suggested by the BoS members.	The textbook list across all courses has been reviewed and updated with the latest editions and relevant recent references. These updates have been included in the final syllabus document.


Member Secretary


Chairperson