B. TECH. FOUR YEAR DEGREE

PROGRAM CURRICULUM

(Applicable for the batches admitted from A.Y 2025-26)

AGRICULTURAL ENGINEERING

ADITYA UNIVERSITY

Aditya Nagar, ADB Road, Surampalem - 533 437

ADITYA UNIVERSITY

Department of Agricultural Engineering

Vision:

To be a globally recognized leader in agricultural engineering by advancing excellence in education, pioneering innovation, and developing sustainable technologies for the future of agriculture."

Mission:

M1: Provide transformative education with industry-ready and interdisciplinary skills.

M2: Advance innovative research through collaboration, experimentation, and practical applications in agriculture.

M3: Promote inclusive, eco-friendly, and sustainable solutions for global agricultural needs.

Program Educational Objectives (PEOs)

PEO 1: Design and develop sustainable and eco-friendly agricultural solutions that benefit society and the environment.

PEO 2: Pursue successful careers in industry, research, or higher studies with interdisciplinary skills and global competencies.

PEO 3: Engage in lifelong learning and adapt to emerging technologies to address evolving challenges in agriculture.

Program Specific Outcomes (PSOs)

PSO 1: Develop farm machinery and green technologies.

PSO 2: Apply post-harvest, dairy and food engineering technologies.

PSO 3: Apply irrigation and drainage engineering and soil and water conservation techniques.

PROGRAM OUTCOMES (PO's)

The 11 Program Outcomes are described as below.

After successful completion of the program, the graduates will be able to

PO1 **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences

PO3 **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations

PO4 **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

PO5 **Engineering tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations

PO6 **The Engineer and the world :** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

PO7 **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice

PO8 **Individual and collaborative teamwork**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

PO9 **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO10 **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO11 **Life-long learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Department of Agricultural Engineering

B.Tech (Ag.E) Program Curriculum (w.e.f A.Y 2025-2026)

UG Programs Offered

- B. Tech (in Agricultural Engineering)

Minimum Credit Requirements to Award B. Tech Degree Under Each Category:

S. No.	Broad Category of Course	Credit Division	
		ICAR	2025-Agri
1	Major/Minor Core Courses (MCC)	116+9#	116+9#
2	Multidisciplinary Courses (MDC)	10	10
3	Ability Enhancement Courses (AEC)	10	10
4	Skill Enhancement Courses (SEC)	08	08
5	Value Added Courses (VAC)	06	06
6	Research Project / Dissertation (PROJ)	15	7
7	Summer Internship (SI)	0	8
8	Audit Courses (AUC)	0	0
Total		**174+10 (NGC)**	**174**

Note:

1. Students must get minimum of 174 credits + Audit courses
2. # Electives

COURSE STRUCTURE
Semester wise course distribution

Course Code	Course Title	Level	L	T	P	C	Hours
First Year							
I Semester							
2501AE01	Deeksharambh	FC	0	0	2	0	4
2501AE02	Crop Production & Protection Technologies	FC	3	0	1	4	5
2501AE03	Introduction to Agricultural Engineering	FC	3	0	1	4	5
2501AE04	Surveying & Levelling	FC	1	0	2	3	5
2501EN01	Essential Cognitive Skills for Engineers	FC	0	0	1	1	2
2501AE05	Basic Electrical Gadgets & Instruments	FC	2	0	1	3	4
2501AE06	Agricultural Informatics	FC	2	0	1	3	4
2501PE02	NSS/NCC-I	FC	0	0	1	1	2
Total			11	0	8	19	31
II Semester							
2501AE07	Skill Enhancement	FC	0	0	8	8	16
2501AE08	Engineering Drawing	FC	0	0	2	2	4
2501CS71	Computer Programming & Data Structures	IC	0	0	2	2	4
2501AE09	Farming Based Livelihood Systems	FC	2	0	1	3	4
2501AE10	Environmental Studies & Disaster Management	FC	2	0	1	3	4
2501AE11	Workshop Technology & Practice	FC	0	0	2	2	4
2501EN02	Advanced Cognitive Skills for Engineers	FC	0	0	1	1	2
2501PE03	NSS/NCC-II	FC	0	0	1	1	2
2501UC11	Employability Skills-I	FC	0	0	2	0	2
Total			4	0	20	22	42

Second Year							
III- Semester							
2501MA10	Engineering Mathematics-I	FC	2	1	0	3	3
2501PH03	Engineering Physics	FC	2	0	1	3	4
2501CH03	Engineering Chemistry	FC	2	0	1	3	4
2501AE12	Engineering Mechanics	FC	2	0	1	3	4
2501AE13	Soil Mechanics	IC	1	0	1	2	3
2501AE14	Fluid Mechanics & Open Channel Hydraulics	FC	1	1	1	3	4
2501AE15	Engineering Properties of Agricultural Produce & Food Science	FC	2	0	1	3	4
2501AE16	Farm Machinery & Equipment-I	IC	2	0	1	3	4
2501PE04	Physical Education, First Aid & Yoga Practice	FC	0	0	2	2	4
2501UC13	Employability Skills-II	FC	0	0	3	0	3
Total			14	2	12	25	37
IV Semester							
2501MA11	Engineering Mathematics-II	IC	2	1	0	3	3
2501AE17	Theory of Structures	IC	1	0	1	2	3
2501AE18	Building Construction & Cost Estimation	IC	2	0	0	2	2
2501AE19	Watershed Hydrology	IC	1	1	1	3	4
2501AE20	Soil & Water Conservation Engineering	IC	1	1	1	3	4
2501AE21	Farm Machinery & Equipment-II	IC	2	0	1	3	4
2501AE22	Renewable Energy Sources	FC	2	0	1	3	4
2501AE23	Post-harvest Engineering of Cereals, Pulses & Oilseeds	IC	2	0	1	3	4
2501AE24	Entrepreneurship Development & Business Management	IC	2	0	1	3	4
2501UC14	Employability Skills-III	IC	0	0	3	0	3
Total			15	3	10	25	35

Third Year							
V- Semester							
2501AE25	Strength of Materials	IC	1	0	1	2	3
2501AE26	Theory of Machines	IC	1	1	0	2	2
2501AE27	Thermodynamics & Heat Transfer	IC	2	1	0	3	3
2501AE28	Tractor & Automotive Engines	FC	1	1	1	3	4
2501AE29	Irrigation & Drainage Engineering	IC	2	1	1	4	5
2501AE34	Food & Dairy Engineering	IC	2	1	1	4	5
2501UC12	Personality Development	FC	1	0	1	2	3
2501AE30	Seminar		0	0	1	1	2
2501AE31	Summer Internship-I (Study tour)	IC	0	0	2	0	
2501UC15	Employability Skills-IV	AC	0	0	3	0	3
Total			10	05	11	21	30
VI- Semester							
	Course Title	**Level**	**L**	**T**	**P**	**C**	**Hours**
2501AE32	Tractor Systems & Controls	IC	1	1	1	3	4
2501AE33	Groundwater, Wells & Pumps	IC	1	1	1	3	4
2501AE95	Sensors, AI & Robotics in Agriculture	AC	2	0	1	3	4
2501AE35	Agricultural Structures & Environment Control	IC	2	0	1	3	4
2501AE36	Bioenergy Systems: Design & Applications	AC	1	1	1	3	4
2501AE37	Refrigeration & Air-conditioning	IC	1	1	1	3	4
2501AE38	Post-harvest Engineering of Horticultural Crops	IC	1	0	1	2	3
2501AE39	Case Study	AC	0	0	1	1	2
Total			09	04	8	21	29

Fourth Year							
VII- Semester							
2501AE40	Project-I	AC	0	0	3	3	6
2501AE41	Engineering Graphics & Design	AC	0	0	2	2	4
2501AE42	Food Quality & Safety	IC	2	0	1	3	4
2501AE43	Watershed Planning & Management	AC	2	0	1	3	4
2501AE44	Sprinkler & Micro Irrigation Systems	AC	1	0	1	2	3
2501AE45	Machine Design	AC	1	1	0	2	2
2501AE46	Electrical Machines	IC	2	0	1	3	4
2501AE47	Agricultural Statistics & Data Analysis	IC	1	0	1	2	3
2501AE49	In-plant Training/Research Internship	AC	0	0	8	8	
Total			09	01	10	28	30
VIII - Semester							
2501AE48	Project-II	AC	0	0	4	4	8
	Elective-I	AC	1-3	0-1	0-2	3	4
	Elective-II	AC	1-3	0-1	1	3	4
	Elective-III	AC	1-3	0-1	1	3	4
2501UC17	Employability Skills-V	AC	0	0	3	0	3
2501AC01	Student Activity Based Learning	AC	0	0	2	0	
	*On-line courses (24 weeks or 80 hours)				6	0	
Total			6	0	16	13	23

Course Code	**Major/Minor Core Courses (MCC)**						**Marks**			**Pre-requisite**
							CIE	**SIE**	**Total**	
2501AE03	Introduction to Agricultural Engineering	FC	3	0	1	4	50	50	100	-
2501AE04	Surveying & Levelling	FC	1	0	2	3	50	50	100	-
2501AE11	Workshop Technology & Practice	FC	0	0	2	2	50	50	100	-

2501AE05	Basic Electrical Gadgets & Instruments	FC	2	0	1	3	50	50	100	-
2501AE08	Engineering Drawing	FC	0	0	2	2	50	50	100	-
2501MA10	Engineering Mathematics- I	FC	2	1	0	3	50	50	100	-
2501PH03	Engineering Physics	FC	2	0	1	3	50	50	100	-
2501CH03	Engineering Chemistry	FC	2	0	1	3	50	50	100	-
2501AE12	Engineering Mechanics	FC	2	0	1	3	50	50	100	-
2501AE13	Soil Mechanics	IC	1	0	1	2	50	50	100	-
2501AE14	Fluid Mechanics & Open Channel Hydraulics	FC	1	1	1	3	50	50	100	-
2501AE15	Engineering Properties of Agricultural Produce & Food Science	FC	2	0	1	3	50	50	100	-
2501AE16	Farm Machinery & Equipment- I	IC	2	0	1	3	50	50	100	-
2501MA11	Engineering Mathematics-II	IC	2	1	0	3	50	50	100	M-I
2501AE17	Theory of Structures	IC	1	0	1	2	50	50	100	-
2501AE18	Building Construction & Cost Estimation	IC	2	0	0	2	50	50	100	-
2501AE19	Watershed Hydrology	IC	1	1	1	3	50	50	100	FMO CH
2501AE20	Soil & Water Conservation Engineering	IC	1	1	1	3	50	50	100	FMO CH
2501AE21	Farm Machinery & Equipment - II	IC	2	0	1	3	50	50	100	FME I
2501AE22	Renewable Energy Sources	FC	2	0	1	3	50	50	100	-
2501AE23	Post-harvest Engineering of Cereals, Pulses & Oilseeds	IC	2	0	1	3	50	50	100	-
2501AE25	Strength of Materials	IC	1	0	1	2	50	50	100	-

2501AE26	Theory of Machines	IC	1	1	0	2	50	50	100	EM
2501AE27	Thermodynamics & Heat Transfer	IC	2	1	0	3	50	50	100	-
2501AE28	Tractor & Automotive Engines	FC	1	1	1	3	50	50	100	-
2501AE29	Irrigation & Drainage Engineering	IC	2	1	1	4	50	50	100	-
2501AE34	Food & Dairy Engineering	IC	2	1	1	4	50	50	100	-
2501AE30	Seminar	AC	0	0	1	1	50	50	100	-
2501AE32	Tractor Systems & Controls	IC	1	1	1	3	50	50	100	TandA E
2501AE33	Groundwater, Wells & Pumps	IC	1	1	1	3	50	50	100	-
2501AE95	Sensors, AI & Robotics in Agriculture	AC	2	0	1	3	50	50	100	-
2501AE35	Agricultural Structures & Environment Control	IC	2	0	1	3	50	50	100	-
2501AE36	Bioenergy Systems: Design & Applications	AC	1	1	1	3	50	50	100	RES
2501AE37	Refrigeration & Air-conditioning	IC	1	1	1	3	50	50	100	-
2501AE38	Post-harvest Engineering of Horticultural Crops	IC	1	0	1	2	50	50	100	-
2501AE39	Case Study	AC	0	0	1	1	50	50	100	-
2501AE41	Engineering Graphics & Design	AC	0	0	2	2	50	50	100	-
2501AE42	Food Quality & Safety	IC	2	0	1	3	50	50	100	-
2501AE43	Watershed Planning & Management	AC	2	0	1	3	50	50	100	WH
2501AE44	Sprinkler & Micro Irrigation Systems	AC	1	0	1	2	50	50	100	-
2501AE45	Machine Design	AC	1	1	0	2	50	50	100	TOM
2501AE46	Electrical Machines	IC	2	0	1	3	50	50	100	BEGI

2501AE47	Agricultural Statistics & Data Analysis	IC	1	0	1	2	50	50	100	-
	Elective- I	AC	2	0	1	3	50	50	100	-
	Elective- II	AC	2	0	1	3	50	50	100	-
	Elective- III	AC	2	0	1	3	50	50	100	-
	Total		81	0	44	125				

Course Code	**Multi-Disciplinary Courses (MDC)**						**Marks**			**Pre-requisite**
	Course Name	**Level**	**L**	**T**	**P**	**C**	**CIE**	**SEE**	**Total**	
2501AE02	Crop Production & Protection Technologies	FC	3	0	1	4	50	50	100	-
2501AE09	Farming Based Livelihood Systems	FC	2	0	1	3	50	50	100	-
2501AE24	Entrepreneurship Development & Business Management	IC	2	0	1	3	50	50	100	-
	Total		7	0	3	10				

Course Code	**Ability Enhancement Courses (AEC)**						**Marks**			**Pre-requisite**
	Course Name	**Level**	**L**	**T**	**P**	**C**	**CIE**	**SEE**	**Total**	
2501PE02	NSS/ NCC- I	FC	0	0	1	1	100	-	100	-
2501CS71	Computer Programming and Data Structures	IC	0	0	2	2	50	50	100	-
2501EN01	Essential Cognitive Skills for Engineers	FC	0	0	1	1	100	-	100	-
2501EN02	Advanced Cognitive Skills for Engineers	FC	0	0	1	1	100	-	100	-
2501PE03	NSS/ NCC- II	FC	0	0	1	1	100	-	100	-

2501PE04	Physical Education, First Aid & Yoga Practice	FC	0	0	2	2	100	-	100	-
2501UC12	Personality Development	FC	1	0	1	2	100	-	100	-
	Total		1	0	9	10				

Course Code	**Skill Enhancement Courses (SEC)**						**Marks**			**Pre-requisite**
	Course Name	**Level**	**L**	**T**	**P**	**C**	**CIE**	**SEE**	**Total**	
2501AE07	1. Skill Enhancement (students can opt any two given modules)	FC	0	0	8	8	50	50	100	-
	a) Operation & maintenance of farm machinery.		0	0	4	4	50	50	100	-
	b) Repair & maintenance of tractors and power tillers.		0	0	4	4	50	50	100	-
	c) Management of agricultural machinery custom hiring & maintenance facilities.		0	0	4	4	50	50	100	-
	d) Valorization of agri-biomass & organic waste.		0	0	4	4	50	50	100	-
	e) Energy audit, energy conservation & energy efficiency.		0	0	4	4	50	50	100	-
	f) Installation & maintenance of micro-irrigation systems.		0	0	4	4	50	50	100	-
	g) Application of remote sensing & GIS for		0	0	4	4	50	50	100	-

	agricultural water management.									
	h) Installation & maintenance of roof top rainwater harvesting systems.		0	0	4	4	50	50	100	-
	i) Agro processing methods, equipment operation & maintenance.		0	0	4	4	50	50	100	-
	j) Food grain godown & warehouse management.		0	0	4	4	50	50	100	-
	k) Post-harvest value chain management including logistics.		0	0	4	4	50	50	100	-
	l) Operation & maintenance of drones used for agricultural applications		0	0	4	4	50	50	100	-
	m)Machine vision, sensors & sensors architecture		0	0	4	4	50	50	100	-
	n) Geophysical survey and investigations for groundwater exploration & installation of tube well/ bore well		0	0	4	4	50	50	100	-
	o) Construction, management & maintenance of protected cultivation structures		0	0	4	4	50	50	100	-
	p) Agro processing methods, equipment operation & maintenance		0	0	4	4	50	50	100	-
	Total		0	0	8	8				

Course Code	Value Added Courses (VAC)						Marks			Pre-requisite
	Course Name	Level	L	T	P	C	CIE	SEE	Total	
2501AE06	Agricultural Informatics	FC	2	0	1	3	50	50	100	-
2501AE10	Environmental Studies & Disaster Management	FC	2	0	1	3	50	50	100	-
	Total		4	0	2	6				

Course Code	Audit Courses (AUC)						Marks			Pre-requisite
	Course Name	Level	L	T	P	C	CIE	SEE	Total	
2501AE01	Deeksharambh	FC	0	0	2	0	100	-	100	-
2501UC11	Employability Skills-I	FC	0	0	2	0	100	-	100	-
2501UC13	Employability Skills-II	FC	0	0	3	0	100	-	100	ES-I
2501UC14	Employability Skills-III	IC	0	0	3	0	100	-	100	ES-II
2501UC15	Employability Skills-IV	AC	0	0	3	0	100	-	100	ES-III
2501UC17	Employability Skills-V	AC	0	0	3	0	100	-	100	ES-IV
2501AC01	Student Activity Based Learning	AC	0	0	2	0				
	*On-line courses (24 weeks or 80 hours)	FC	0	0	6	0	100	-	100	-
	Total		0	0	22	0				

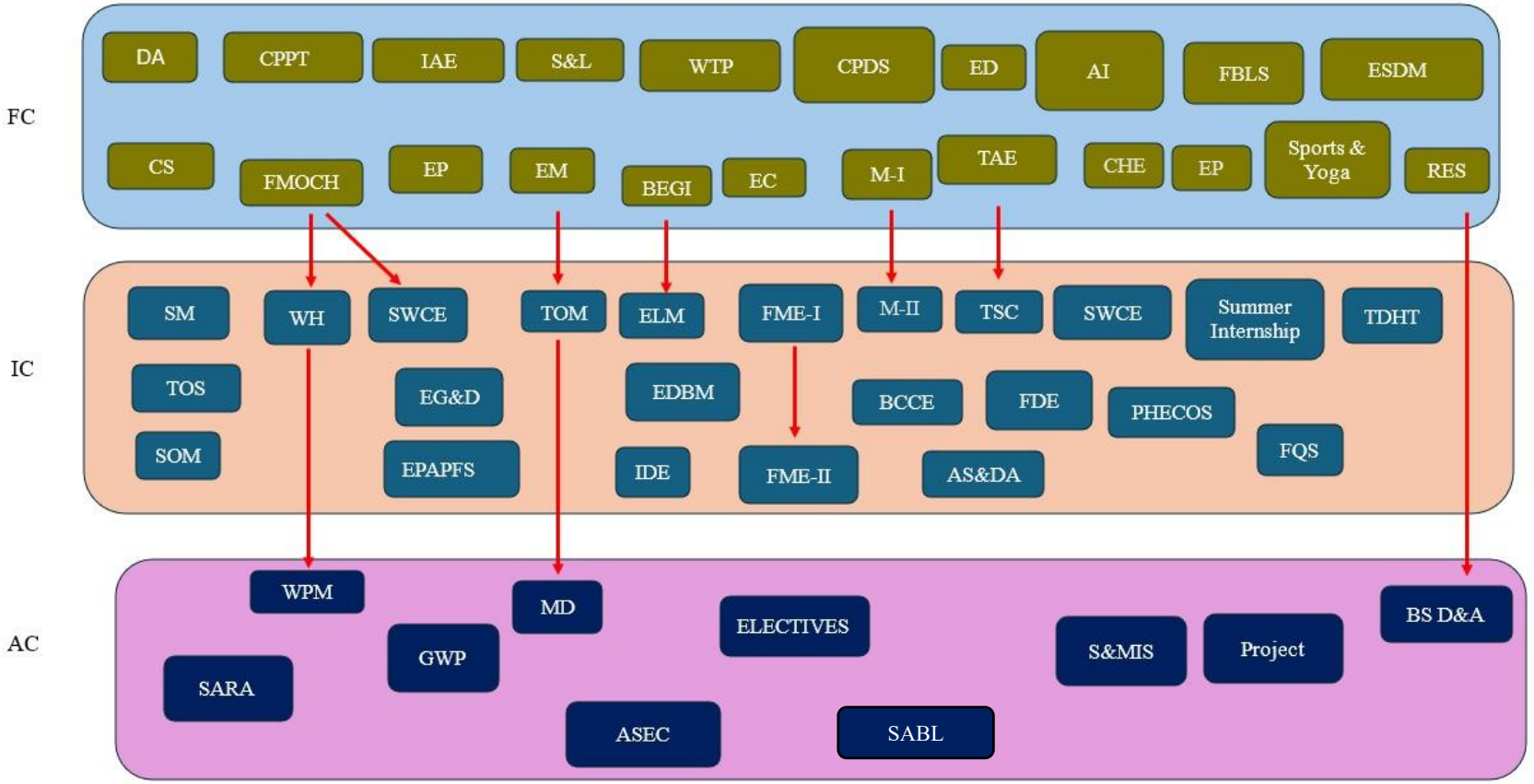
Course Code	Summer Internship (SI)						Marks			Pre-requisite
	Course Name	Level	L	T	P	C	CIE	SEE	Total	
2501AE31	Summer Internship-1 (Study tour)	FC	0	0	0	0	100	-	100	-
2501AE49	In-plant Training/ Research Internship	AC	0	0	8	8	100	-	100	-
	Total		0	0	8	8				

Course Code	Research Project / Dissertation (PROJ)						Marks			Pre-requisite
	Course Name	Level	L	T	P	C	CIE	SEE	Total	
2501AE40	Project- I	AC	0	0	3	3	50	50	100	-
2501AE48	Project -II	AC	0	0	4	4	50	50	100	-
	Total		0	0	7	7				

Course Code	Electives						Marks			Pre-requisite
	Title	Level	L	T	P	C	CIE	SEE	Total	
2501AE50	Mechanics of Tillage & Traction	AC	1	1	1	3	50	50	100	-
2501AE51	Farm Machinery Design & Production	AC	1	1	1	3	50	50	100	-
2501AE52	Tractor Design & Testing	AC	1	1	1	3	50	50	100	-
2501AE53	Hydraulic Drives & Controls	AC	1	1	1	3	50	50	100	-
2501AE54	Human Engineering & Safety	AC	1	1	1	3	50	50	100	-
2501AE55	Precision Agriculture & System Management	AC	2	0	1	3	50	50	100	-
2501AE56	Photovoltaic Technology & Systems	AC	2	0	1	3	50	50	100	-
2501AE57	Wind Power Technology & Systems	AC	2	0	1	3	50	50	100	-
2501AE58	Waste & By-products Utilization	AC	2	0	1	3	50	50	100	-
2501AE59	Floods & Control Measures	AC	2	0	1	3	50	50	100	-
2501AE60	Remote Sensing & GIS Applications	AC	2	0	1	3	50	50	100	-
2501AE61	Information Technology for Land & Water Management	AC	2	0	1	3	50	50	100	-
2501AE62	Wasteland Development	AC	2	0	1	3	50	50	100	-
2501AE63	Minor Irrigation & Command Area Development	AC	2	0	1	3	50	50	100	-
2501AE64	Management of Canal Irrigation System	AC	2	0	1	3	50	50	100	-
2501AE65	Water Quality & Management Measures	AC	1	1	1	3	50	50	100	-

2501AE66	Landscape Irrigation Design & Management	AC	1	1	1	3	50	50	100	-
2501AE67	Artificial Intelligence	AC	2	0	1	3	50	50	100	-
2501AE68	Advances in Automation & Robotics in Agriculture	AC	2	0	1	3	50	50	100	-
2501AE69	Environmental Engineering	AC	2	0	1	3	50	50	100	-
2501AE70	Development of Processed Food Products	AC	2	0	1	3	50	50	100	-
2501AE71	Food Packaging Technology	AC	2	0	1	3	50	50	100	-
2501AE72	Food Plant and Equipment Design	AC	1	1	1	3	50	50	100	-
2501AE73	Emerging Technologies in Food Processing	AC	3	0	0	3	50	50	100	-
2501AE74	Processing of Livestock, Fish & Marine Products	AC	2	0	1	3	50	50	100	-
2501AE75	Food Business Management & Entrepreneurship Development	AC	3	0	0	3	50	50	100	-
2501AE76	Natural Fibres: Extraction & Properties	AC	2	0	1	3	50	50	100	-
2501AE77	Natural Fibre Applications in Agriculture	AC	2	0	1	3	50	50	100	-
2501AE78	Processing of Natural Fibres	AC	2	0	1	3	50	50	100	-
2501AE79	Agricultural Marketing & Trade	AC	2	0	1	3	50	50	100	-
2501AE80	Operations Research	AC	2	1	0	3	50	50	100	-
2501AE81	Mechatronics	AC	1	1	1	3	50	50	100	-
2501AE94	Machine Learning	AC	2	0	1	3	50	50	100	-
2501CS72	Python Programming	AC	1	0	2	3	50	50	100	-

2025 B.Tech Agricultural Engineering Curriculum
Prerequisite Flowchart



Legends:

FC - Foundation Level Courses
IC - Intermediate Level Courses
AC - Advanced Level Courses

Foundation Level Courses:

DA - Deeksharambh
CPPT - Crop Production and Protection Technologies
IAT - Introduction to Agricultural Engineering
SandL -Surveying and Levelling
WTP - Workshop Technology and Practice
CPDS - Computer Programming and Data Structures
ED - Engineering Drawing
AI - Agricultural Informatics
FBLS - Farming Based Livelihood Systems
ESDM - Environmental Studies and Disaster Management
CS - Communication Skills
FMOCH - Fluid Mechanics and Open Channel Hydraulics
EP - Engineering Physics
EM - Engineering Mechanics
BEGI - Basic Electrical Gadgets and Instruments
EC - Engineering Chemistry
M-I -Engineering Mathematics-I
TAE - Tractor and Automotive Engines
EP - Engineering Physics
RES - Renewable Energy Sources

Intermediate Level Courses:

SM - Soil Mechanics
WH - Watershed Hydrology
TOM – Theory of Machines
ELM – Electrical Machines
FME-I – Farm Machineryand Equipment-I
M-II- Engineering Mathematics-II
TSC – Tractor Systems and Controls
TDHT – Thermodynamics and Heat Transfer
TOS – Theory of Structures
EDBM – Entrepreneurship Development and Business Management
BCCE – Building Constructionand Cost Estimation
FDE – Food and Dairy Engineering
PHECOS – Post-harvest Engineering of Cereals, Pulses and Oilseeds
SOM – Strength of Materials
IDE- Irrigation and Drainage Engineering
FME-II – Farm Machineryand Equipment II
ASandDA – Agricultural Statistics and Data Analysis
FQS – Food Quality and Safety

Advanced Level Courses:

WPM –Watershed Planning and Management
MD –Machine Design
SandMIS –Sprinkler andMicro Irrigation Systems
BS DandA –Bioenergy Systems: Design and Applications
SABL- Student Activity Based Learning

Minor Degree in Agricultural Engineering (offered to other branches students)										
Agricultural Engineering							Marks			Pre-requisite
Course Code	Course Name	Level	L	T	P	C	CIE	SEE	Total	
2501AE82	Fundamentals of Renewable Energy Sources	FC	3	0	0	3	50	50	100	-
2501AE83	Post-harvest Engineering of Cereal Crops	FC	3	0	0	3	50	50	100	-
2501AE84	Ground Water Hydrology	FC	3	0	0	3	50	50	100	-
2501AE85	Micro Irrigation Systems	IC	2	0	0	2	50	50	100	-
2501AE86 2501AE87	Surface Water Hydrology (OR) Land and Water Management Engineering	IC	3	0	0	3	50	50	100	GWH
2501AE88 2501AE89	Agricultural Process Engineering and Food Quality (OR) Post-Harvest Engineering for Horticultural Produce	AC	3	0	0	3	50	50	100	PHECC
2501AE90 2501AE91	Agricultural Machinery and Equipment (OR) Design of Bio-Energy systems	AC	3	0	0	3	50	50	100	FRES
	Total		**20**			**20**				

Minor Degree in Quantum Technologies

S.No.	Course Code	Course Name	L	T	P	C	Semester
Mandatory Courses							
1	251EC097	Survey of Quantum technologies and Application	3	0	0	3	IV
2	251EC098	Foundations of Quantum Technologies	3	0	0	3	V
3	251EC099	Basic Programming Lab (or)	1	0	2	3	V
	251EC100	Basic Laboratory Course for Quantum Technologies					
4	251EC101	Quantum Algorithms and Cryptography	12 week 3 Credit - NPTEL MOOC			3	VII/VIII
Any One course from the below							
5	251EC102	Introduction to Quantum Computation	3	0	0	3	VI
6	251EC103	Introduction to Quantum Communication	3	0	0	3	VI
7	251EC104	Introduction to Quantum Sensing	3	0	0	3	VI
8	251EC105	Introduction to Quantum Materials	3	0	0	3	VI
Any One course from the below							
9	251EC106	Engineering Foundations of Quantum Technologies	3	0	0	3	VII
10	251EC107	Solid State Physics for Quantum Technologies	3	0	0	3	VII
11	251EC108	Quantum Optics	3	0	0	3	VII
12	251EC109	Quantum Cybersecurity	3	0	0	3	VII
13	251EC110	Quantum Machine Learning	3	0	0	3	VII
Total			**18**	**0**	**0**	**18**	