

**PROGRAM DETAILS OF
B.TECH
IN
AGRICULTURAL ENGINEERING**



NAVSARI AGRICULTURAL UNIVERSITY

**COLLEGE OF AGRICULTURAL ENGINEERING & TECHNOLOGY
DEDIAPADA**

Program – B.Tech. (Agricultural Engineering)

Course Syllabus of B. Tech Agril. Engineering

Semester-wise (Old)

B.Tech. (Agril. Engg.) Semester - 1					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Maths (E)-101	Engineering Mathematics-I	3(2+1)	2	0	1
Phy (E)-101	Engineering Physics	3(2+1)	2	1	0
Chem (E)-101	Engineering Chemistry	3(2+1)	2	1	0
FMP - 101	Workshop Practice	1(0+1)	0	1	0
RE - 101	Surveying and Leveling	3(1+2)	1	2	0
FMP - 103	Engineering Drawing	2(0+2)	0	2	0
ES - 101	Environmental Science	3(3+0)	3	0	0
APE - 101	Electrical Circuits	3(2+1)	2	1	0
Eng (E) - 101	English	2(1+1)	1	0	1
PHY. EDU. 101	PHY, EDU / NCC / NSS (Non Credit Course)	1(0+0)	0	0	0

B.Tech. (Agril. Engg.) Semester - 2					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Maths (E)-102	Engineering Mathematics-II	3(2+1)	2	0	1
APE - 102	Computers Programming and Data Structures	3(1+2)	1	2	0
RE - 102	Applied Electronics and Instrumentation	3(2+1)	2	1	0
Agri (E) - 102	Agriculture for Engineers	4(3+1)	3	1	0
FMP - 102	Workshop Technology	3(2+1)	2	1	0
FMP - 104	Engineering Mechanics	3(2+1)	2	1	0
FMP - 106	Thermodynamics and Heat Engines	4(3+1)	3	1	0
PHY.EDU.102	Phy.Edu/NCC/NSS(Non Credit Course)	1(0+0)	0	0	0

B.Tech. (Agril. Engg.) Semester - 3					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
APE - 201	Engineering Properties of Biological Materials and Food Quality	3(2+1)	2	1	0
SWE-201	Soil Mechanics	3(2+1)	2	1	0
SWE - 203	Fluid Mechanics	3(2+1)	2	1	0
FMP - 201	Farm Machinery and Equipment - I	3(2+1)	2	1	0
FMP - 203	Farm Power	3(2+1)	2	1	0
SWE - 205	Watershed Hydrology	3(2+1)	2	1	0
Maths (E)-201	Engineering Mathematics-III	3(2+1)	2	0	1
Eco (E)- 201	Agribusiness Management and Trade	3(3+0)	3	0	0

B.Tech. (Agril. Engg.) Semester - 4					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
FMP - 202	Farm Machinery and Equipment – II	3(2+1)	2	1	0
RE - 202	Renewable Energy Sources	3(2+1)	2	1	0
SWE - 202	Soil and Water Conservation Engineering	3(2+1)	2	1	0
SWE - 204	Irrigation Engineering	4(3+1)	3	1	0
APE - 202	Crop Process Engineering	3(2+1)	2	1	0
FMP - 204	Theory of Machines	3(2+1)	2	1	0
APE - 204	Heat and Mass Transfer	2(2+0)	2	0	0
APE - 206	Database Management and Internet Applications	2(0+2)	0	2	0
FMP-206	Field Operation and Maintenance of Tractors and Farm Machinery - I	1(0+1)	0	1	0

B.Tech. (Agril. Engg.) Semester - 5					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
FMP - 301	Machine Drawing and CAD/CAM Computer Graphics	3(1+2)	1	2	0
FMP - 303	Machine Design	3(2+1)	2	1	0
APE - 301	Dairy and Food Engineering	3(2+1)	2	1	0
FMP - 305	Tractor Systems and Controls	3(2+1)	2	1	0
APE - 303	Electrical Machines and Power Utilization	3(2+1)	2	1	0
FMP-307	Field Operation and Maintenance of Tractors and Farm Machinery - II	2(1+1)	1	1	0
RE - 301	Strength of Material	3(2+1)	2	1	0
SWE - 301	Ground Water, Wells and Pumps	3(2+1)	2	1	0

B.Tech. (Agril. Engg.) Semester - 6					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
APE - 302	Agricultural Structures and Environment Control	3(2+1)	2	1	0
APE - 304	Drying and Storage Engineering	4(3+1)	3	1	0
RE - 302	Design of Structures	3(2+1)	2	1	0
SWE - 302	Drainage Engineering	2(1+1)	1	1	0
SWE - 304	Soil and Water Conservation Structures	3(2+1)	2	1	0
FMP- 302	Refrigeration and Air Conditioning	3(2+1)	2	1	0
AEE - 302	Entrepreneurship Development and Communication Skills	3(2+1)	2	0	1

B.Tech. (Agril. Engg.) Semester - 7					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
AE – 401	Project	6(0+6)	0	6	0
AE - 403	Seminar	1(0+1)	0	0	1
RE - 401	Renewable Energy Technology	3(2+1)	2	1	0
Student will have to take minimum of 15 credits courses from the following Cafeteria Courses					
APE - 401	Food Packaging Technology	3(2+1)	2	1	0
RE - 403	Design and Maintenance of Greenhouse	3(2+1)	2	1	0
APE - 403	Waste and By product Utilization	2(1+1)	1	1	0
APE - 405	Development of Processed Products and Equipments	3(2+1)	2	1	0
APE - 407	Food Processing Plant Design and Layout	2(1+1)	1	1	0
SWE - 401	Micro Irrigation System Design	3(2+1)	2	1	0
SWE - 403	Watershed Planning and Management	3(2+1)	2	1	0
SWE - 405	Minor Irrigation and Command area Development	3(2+1)	2	1	0
SWE - 407	Gully and Ravine Control Structures	3(2+1)	2	1	0
SWE - 409	Remote Sensing & GIS Applications	3(2+1)	2	1	0
SWE - 413	System Engineering	3(3+0)	3	0	0
SWE - 411	Reservoir and Farm Pond Design	3(2+1)	2	1	0
FMP - 401	Tractor Design and Testing	3(2+1)	2	1	0
FMP – 403	Hydraulic Drive & Controls	3(2+1)	2	1	0
FMP - 405	Farm Power and Machinery Management	3(2+1)	2	1	0
FMP - 407	Human Engineering and Safety	2(1+1)	1	1	0
FMP - 409	Production Technology for Agril. Machinery	3(2+1)	2	1	0
FMP - 411	Mechanics of Tillage and Traction	3(2+1)	2	1	0
RE - 405	Environmental Engineering	3(2+1)	2	1	0
RE - 407	Biomass Management for Fodder and Energy	2(1+1)	1	1	0

B.Tech. (Agril. Engg.) Semester - 8					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Student will undertake in-plant training of 25 credits hours which will include practical training at the Institution, training in one (4 months) / two (2 months each) Industrial Units and Educational tour.					
AE (SWE) - 402	In-Plant Training	10(0+10)	0	10	0
AE (FMP /APE / RE) - 404	In-Plant Training	15(0+15)	0	15	0

Revised Semester-wise (New)

Course Syllabus of B. Tech Agril. Engineering

B.Tech. (Agril. Engg.) Semester - 1					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Maths (E)-101	Engineering Mathematics-I	3(2+1)	2	0	1
Phy (E)-101	Engineering Physics	3(2+1)	2	1	0
Chem (E)-101	Engineering Chemistry	3(2+1)	2	1	0
FMP - 101	Workshop Practice	1(0+1)	0	1	0
RE - 101	Applied Electronics and Instrumentation	3(2+1)	2	1	0
FMP - 103	Engineering Drawing	2(0+2)	0	2	0
ES - 101	Environmental Science	3(3+0)	3	0	0
PFE - 101	Computers Programming and Data Structures	3(1+2)	1	2	0
Eng (E) - 101	English	2(1+1)	1	0	1
PHY. EDU. 101	PHY, EDU / NCC / NSS (Non Credit Course)	1(0+0)	0	0	0

B.Tech. (Agril. Engg.) Semester - 2					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Maths (E)-102	Engineering Mathematics-II	3(2+1)	2	0	1
PFE - 102	Electrical Circuits	3(2+1)	2	1	0
RE - 102	Surveying and Leveling	3(1+2)	1	2	0
Agri (E) - 102	Agriculture for Engineers	4(3+1)	3	1	0
FMP - 102	Workshop Technology	3(2+1)	2	1	0
FMP - 104	Engineering Mechanics	3(2+1)	2	1	0
FMP - 106	Thermodynamics and Heat Engines	4(3+1)	3	1	0
PHY.EDU.102	Phy.Edu/NCC/NSS(Non Credit Course)	1(0+0)	0	0	0

B.Tech. (Agril. Engg.) Semester - 3					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
PFE - 201	Engineering Properties of Biological Materials and Food Quality	3(2+1)	2	1	0
SWE-201	Soil Mechanics	3(2+1)	2	1	0
SWE - 203	Fluid Mechanics	3(2+1)	2	1	0
FMP - 201	Farm Machinery and Equipment - I	3(2+1)	2	1	0
FMP - 203	Farm Power	3(2+1)	2	1	0
SWE - 205	Watershed Hydrology	3(2+1)	2	1	0
Maths (E)-201	Engineering Mathematics-III	3(2+1)	2	0	1
Eco (E)- 201	Agribusiness Management and Trade	3(3+0)	3	0	0

B.Tech. (Agril. Engg.) Semester - 4					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
FMP - 202	Farm Machinery and Equipment – II	3(2+1)	2	1	0
RE - 202	Renewable Energy Sources	3(2+1)	2	1	0
SWE - 202	Soil and Water Conservation Engineering	3(2+1)	2	1	0
SWE - 204	Irrigation Engineering	4(3+1)	3	1	0
PFE - 202	Crop Process Engineering	3(2+1)	2	1	0
FMP - 204	Theory of Machines	3(2+1)	2	1	0
PFE - 204	Heat and Mass Transfer	2(2+0)	2	0	0
PFE - 206	Database Management and Internet Applications	2(0+2)	0	2	0
FMP-206	Field Operation and Maintenance of Tractors and Farm Machinery - I	1(0+1)	0	1	0

B.Tech. (Agril. Engg.) Semester - 5					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
FMP - 301	Machine Drawing and CAD/CAM Computer Graphics	3(1+2)	1	2	0
FMP - 303	Machine Design	3(2+1)	2	1	0
PFE - 301	Dairy and Food Engineering	3(2+1)	2	1	0
FMP - 305	Tractor Systems and Controls	3(2+1)	2	1	0
PFE - 303	Electrical Machines and Power Utilization	3(2+1)	2	1	0
FMP-307	Field Operation and Maintenance of Tractors and Farm Machinery - II	2(1+1)	1	1	0
RE - 301	Strength of Material	3(2+1)	2	1	0
SWE - 301	Ground Water, Wells and Pumps	3(2+1)	2	1	0

B.Tech. (Agril. Engg.) Semester - 6					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
PFE - 302	Agricultural Structures and Environment Control	3(2+1)	2	1	0
PFE - 304	Drying and Storage Engineering	4(3+1)	3	1	0
RE - 302	Design of Structures	3(2+1)	2	1	0
SWE - 302	Drainage Engineering	2(1+1)	1	1	0
SWE - 304	Soil and Water Conservation Structures	3(2+1)	2	1	0
FMP- 302	Refrigeration and Air Conditioning	3(2+1)	2	1	0
AEE - 302	Entrepreneurship Development and Communication Skills	3(2+1)	2	0	1

B.Tech. (Agril. Engg.) Semester - 7					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
AE – 401	Project	6(0+6)	0	6	0
AE - 403	Seminar	1(0+1)	0	0	1
RE - 401	Renewable Energy Technology	3(2+1)	2	1	0
Student will have to take minimum of 15 credits courses from the following Cafeteria Courses					
PFE - 401	Food Packaging Technology	3(2+1)	2	1	0
RE - 403	Design and Maintenance of Greenhouse	3(2+1)	2	1	0
PFE - 403	Waste and Byproduct Utilization	2(1+1)	1	1	0
PFE - 405	Development of Processed Products and Equipments	3(2+1)	2	1	0
PFE - 407	Food Processing Plant Design and Layout	2(1+1)	1	1	0
SWE - 401	Micro Irrigation System Design	3(2+1)	2	1	0
SWE - 403	Watershed Planning and Management	3(2+1)	2	1	0
SWE - 405	Minor Irrigation and Command area Development	3(2+1)	2	1	0
SWE - 407	Gully and Ravine Control Structures	3(2+1)	2	1	0
SWE - 409	Remote Sensing & GIS Applications	3(2+1)	2	1	0
SWE - 413	System Engineering	3(3+0)	3	0	0
SWE - 411	Reservoir and Farm Pond Design	3(2+1)	2	1	0
FMP - 401	Tractor Design and Testing	3(2+1)	2	1	0
FMP – 403	Hydraulic Drive & Controls	3(2+1)	2	1	0
FMP - 405	Farm Power and Machinery Management	3(2+1)	2	1	0
FMP - 407	Human Engineering and Safety	2(1+1)	1	1	0
FMP - 409	Production Technology for Agril. Machinery	3(2+1)	2	1	0
FMP - 411	Mechanics of Tillage and Traction	3(2+1)	2	1	0
RE - 405	Environmental Engineering	3(2+1)	2	1	0
RE - 407	Biomass Management for Fodder and Energy	2(1+1)	1	1	0

B.Tech. (Agril. Engg.) Semester - 8					
Course Code	Course Name	Total Credits	Lecture	Practical	Tutorial
Student will undertake in-plant training of 25 credits hours which will include practical training at the Institution, training in one (4 months) / two (2 months each) Industrial Units and Educational tour.					
AE (SWE) - 402	Educational tour	0(0+0)	0	0	0
AE - 404	In-Plant Training	25(0+25)	0	25	0