

COLLEGE OF AGRICULTURAL ENGINEERING & TECHNOLOGY



Navsari Agricultural University,
Parsi Tekra, Dediapada- 393040 Di. Narmada

Post Graduate Syllabus

Soil and Water Engineering

No.	Course Code	Course Title	Credits
1.	SWE 501*	Watershed Hydrology	2+1
2.	SWE 502*	Design of Farm Irrigation Systems	2+1
3.	SWE 503*	Agricultural Drainage Systems	2+1
4.	SWE 504*	Ground Water Engineering	2+1
5.	SWE 505	Soil and Water Conservation Engineering	2+1
6.	SWE 506	Crop Environmental Engineering	2+0
7.	SWE 507	Design of Pumps for Irrigation and Drainage	2+0
8.	SWE 508	Open Chanel Flow	3+0
9.	SWE 509	Flow Trough Porous Media	2+0
10.	SWE 510	Water Resources System Engineering	3+0
11.	SWE 511	GIS and Remote Sensing for Land and Water Resource Management	2+1
12.	SWE 512	Watershed Management and Modeling	2+1
13.	SWE 513	Land Development and Earth Moving Machinery	2+0
14.	SWE 591	Master's Seminar	1+0
15.	SWE 592	Special Problem	0+1
16.	SWE 595#	Industry/Institute Training	NC
17.	SWE 599	Masters Research	20
18.	SWE 601**	Advance Hydrology	3+0
19.	SWE 602**	Soil and Water Systems' Simulation and Modelling	2+1
20.	SWE 603	Modelling Soil Erosion Processes	2+1
21.	SWE 604	Advanced Hydro-Mechanics in Soil Aquifer Systems	3+0
22.	SWE 605	Hydro-Chemical Modelling and Pollutant Management	3+0
23.	SWE 606	Plant Growth Modelling and Simulation	3+0
24.	SWE 607	Advances in Irrigation Drainage	2+0
25.	SWE 691	Doctoral Seminar I	1+0
26.	SWE 692	Doctoral Seminar II	1+0
27.	SWE 693	Special Problem	0+1
28.	SWE 694	Case Study	0+1
29.	SWE 699	Doctoral Research	45

* *Compulsory for Master's Programme,*
SWE 595 Minimum Three Weeks Training

** *Compulsory for Doctoral Programme*

Farm Machinery and Power Engineering

No.	Course Code	Course Title	Credits
1.	FMPE 501*	Design of Farm Power and Machinery Systems	3+1
2.	FMPE 502*	Soil Dynamics in Tillage and Traction	2+1
3.	FMPE 503*	Testing and Evaluation of Tractors and Farm Equipment	2+1
4.	FMPE 504*	System Simulation and Computer Aided Problem Solving in Engineering	1+1
5.	FMPE 505	Applied Instrumentation in Farm Machinery and Stress Analysis Engineering	2+1
6.	FMPE 506	System Engineering and Productivity	2+1
7.	FMPE 507	Farm Machinery Dynamics Noise & Vibrations	3+1
8.	FMPE 508	Tractor Design	2+1
9.	FMPE 509	Operations Research in Farm Power & Machinery Management	2+1
10.	FMPE 510	Ergonomics and Safety in Farm Operations	2+1
11.	FMPE 511/ PFE 502	Engineering Properties of Biological Materials	2+1
12.	FMPE 512	Agro-Energy Audit and Management	2+0
13.	FMPE 513	Design and Analysis of Renewable Energy Conversion Systems	3+0
14.	FMPE 514	Research Methodology	0+1
15.	FMPE 591	Master's Seminar	1+0
16.	FMPE 592	Special Problem	0+1
17.	FMPE 595#	Industry/Institute Training	NC
18.	FMPE 599	Masters Research	20
19.	FMPE 601**	Advances in Farm Machinery and Power Engineering	3+1
20.	FMPE 602**	Simulation Modelling in Farm Machinery and Power Engineering	2+0
21.	FMPE 603	Energy Conservation and Management in Farm Machinery and Power Engineering	2+0
22.	FMPE 604	Computer Aided Analysis and Design of Farm Machinery	2+1
23.	FMPE 605	Machinery for Natural Resource Management and Precision Farming	3+1
24.	FMPE 606	Advance in Hydraulics and Electro Pnumatic Controls	2+0
25.	FMPE 691	Doctoral Seminar I	1+0
26.	FMPE 692	Doctoral Seminar II	1+0
27.	FMPE 693	Special Problem	0+1
28.	FMPE 694	Case Study	0+1
29.	FMPE 699	Doctoral Research	45

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FMPE 595 Minimum Three Weeks Training

** *Compulsory for Doctoral Programme*

Process and Food Engineering

No.	Course Code	Course Title	Credits
1.	PFE 501*	Transport Phenomena in Food Engineering	2+1
2.	PFE 502*	Engineering Properties of Food Materials	2+1
3.	PFE 503*	Advance Food Process Engineering	2+1
4.	PFE 504*	Unit Operations in Food Process Engineering	2+1
5.	PFE 505	Energy Management in Food Processing Industries	2+1
6.	PFE 506	Processing of cereals, Pulses and Oilseeds	2+1
7.	PFE 507	Food Processing Equipment and Plant Design	2+1
8.	PFE 508	Fruits and Vegetables Process Engineering	2+1
9.	PFE 509	Meat Processing	2+1
10.	PFE 510	Food Packaging	2+1
11.	PFE 511	Food Quality and Safety Engineering	2+1
12.	PFE 512	Farm Structures and Environmental Control	1+1
13.	PFE 513	Storage Engineering and Handling of Agricultural Products	2+1
14.	PFE 514	Seed Drying, Processing and Storage	2+1
15.	PFE 515	Biochemical and Process Engineering	2+1
16.	PFE 591	Master's Seminar	1+0
17.	PFE 592	Special Problem	0+1
18.	PFE 595#	Industry/Institute Training	NC
19.	PFE 599	Masters Research	20
20.	PFE 601**	Textural & Rheological Characteristics of Food Materials	2+1
21.	PFE 602**	Advance in Food Processing	3+0
22.	PFE 603	Mathematical Models in Food Processing	3+0
23.	PFE 604	Advance in Drying of Food Materials	2+1
24.	PFE 605	Agricultural Waste and by-Products Utilization	2+1
25.	PFE 691	Doctoral Seminar I	1+0
26.	PFE 692	Doctoral Seminar II	1+0
27.	PFE 693	Special Problem	0+1
28.	PFE 694	Case Study	0+1
29.	PFE 699	Doctoral Research	45

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Compulsory Non-Credit Courses

(Compulsory for Master's Programme in All Disciplines, Optional for Ph. D. Scholars)

No.	Course Code	Course Title	Credits
1.	PGS 501	Library and Information Services	0+1
2.	PGS 502	Technical Writing and Communications Skills	0+1
3.	PGS 503 (e-course)	Intellectual Property and Its Management in Agriculture	1+0
4.	PGS 504	Basic Concepts in Laboratory Techniques	0+1
5.	PGS 505 (e-course)	Agricultural Research, Research Ethics and Rural Development Programmes	1+0
6.	PGS 506 (e-course)	Disaster Management	1+0

Suggested Minor/Supporting Courses Civil Engineering

(Some Identified Minor/Supporting Courses)

No.	Course Code	Course Title	Credits
1.	CE 501	Open Chanel Flow	3+0
2.	CE 502	Dams & Reservoir Operations	3+1
3.	CE 503	Water Quality and Pollution Control	3+1
4.	CE 504	Fluvial Hydraulics	2+1
5.	CE 505	Experimental Stress Analysis	2+1
6.	CE 506	Similitude in Engineering	2+1
7.	CE 507	Control of Pollution from Solid Wastes	2+0
8.	CE 601	Probabilistic approach in Design	2+0
9.	CE 602	Random Vibrations	2+0
10.	CE 603	Design of Bins and Silos	2+1
11.	CSE 501	Computer Graphics	2+1
12.	CSE 502	Neural Network and Its Applications	2+1
13.	EE 501	Applied Instrumentation	2+1
14.	EE 502	Process Control Systems	2+1
15.	ME 501	Mechanism Analysis and Syntheses	3+0
16.	ME 502	Vibrations	3+0