



Department of Farm Structures and Rural Electrification

Dr. A. S. College of Agril. Engineering and Technology

Mahatma Phule Krishi Vidyapeeth, Rahuri

Tal. Rahuri 413 722, Dist. Ahmednagar (MS)



Preamble:

Department has contributed in teaching UG & PG programme. The faculties of the department have guided about 70 graduate students on different aspects of farm structures and rural electrification. The faculties disseminated their research contribution by presenting research papers in national conferences and seminars. They have also published various research papers in journals. The fundamentals associated with basic sciences and engineering are taught in the UG programme leading to B.Tech. degree in Agricultural Engineering. The students are well exposed to theoretical and practical aspects through the lectures and practical's with advanced state of art teaching aids.

As PG program is not available in this department faculties associated as advisory committee members for M.Tech.(Agril.Engg.) , M.Sc.(Agri.), and Ph.D.(Agri. & Agril. Engg.) students. Faculty has participated in various University events & formulation of revised B. Tech syllabus under 5th Dean's committee.

Current research studies include Electro culture technology, effect of seed treatment with electrical field on germination of Tomato, onion, soybean, sorghum and groundnut seed etc.

Perspective & thrust area

Electro culture

Energy conservation

Use of renewable in agriculture

Automation in agriculture

Strategies

Carryout need based research

Adoption of techniques for optimal electricity use in farming

Minimal dependency on conventional energy for farming

Creating awareness in rural population about safety aspects of electricity

Future plans

To strengthen teaching, research and extension activities

To establish research linked with the farmers requirements

To provide trained man power & technological help to farmers

Contact Details: Head, Dept. of Farm Structures and Rural Electrification,
Dr. A S College of Agril. Engg. & Technology, MPKV, Rahuri
Tal. Rahuri 413 722 Dist. Ahmednagar (MS)
Phone : 02426 243211, e-mail : kjkindian123@gmail.com

Academic Programmes:

B. Tech. (Agril. Engg.)

Capacity of students: 64

Year of start: 1969

Course Layout:

1. B. Tech. (Agril. Engg.)

Sr. No.	Course No.	Course Title	Credits
1	BS-MATH 111	Engineering Mathematics-I	(2+1)
2	BS-MATH 122	Engineering Mathematics-II	(2+1)
3	BS-MATH 233	Engineering Mathematics-III	(2+1)
4	BS-PHY 111	Engineering Physics	(1+1)
5	BS-PHY 242	Applied Electronics & Instrumentation	(1+1)
6	BS-COMP 111	Computer Programming and Data Structures	(1+1)
7	BS-COMP 122	Web Designing and Internet Applications	(0+2)
8.	AS-EXTN 111	Communication Skills and Personality Development	(1+1)
9.	REE 111	Engineering Chemistry	(1+1)
10.	REE 122	Electrical Machines and Power Utilization	(2+1)
11.	REE 243	Fundamentals of Renewable Energy Sources	(2+1)
12	REE 354	Renewable Power Sources	(2+1)
13	REE 365	Bio-energy Systems: Design and Applications	(2+1)
14	FS 111	Engineering Mechanics	(2+1)
15	FS 122	Strength of Materials	(1+1)
16	FS 233	Theory of Structures	(1+1)
17	FS 244	Building Construction and Cost Estimation	(1+1)
18	FS 355	Agricultural Structures, Storage Engineering and Environmental Control	(2+1)
19	ELE – REE 481	Photovoltaic Technology and Systems	(2+1)
20	ELE- REE 482	Waste & By-products Utilization	(2+1)
21	ELE – FS 481	Greenhouse Structure for Protected Cultivation	(2+1)
22	ELE – FS 482	Rural Transport, Water Supply & Sanitation	(2+1)
23	GAE REE 477-1	Drying of Different Vegetables using Solar dryer	(0+10)
24	GAE REE 477-2	Preparation of Briquettes for Furnaces & Cook Stoves	(0+10)
25	GAE FS 477-1	Bamboo Processing for Value added Production	(0+10)
26	GAE FS 477-2	Design & Development of Advanced Agricultural Structures	(0+10)
27	GAE FS 477-3	Production of tiles	(0+10)

2. M. Tech.

A) Minor Subjects

Sr. No.	Course No.	Course Title	Credits
1.	MATH 501	Higher Engineering Mathematics	3(2+1)
2.	MATH 502	Methods of Numerical Analysis	2(1+1)
3.	MATH 503	Advance Calculus for Engineers	2(2+0)

B) Supporting Subjects

Sr. No.	Course No.	Course Title	Credits
2.	BSCT 501	Computer Graphics	3(2+1)
3.	MATH 504	Neural Network and Its Applications	3(2+1)
5.	AE 503	Applied Instrumentation	3(2+1)
6.	BSCT 502	Computer Languages for Engineering Applications	3(1+2)

C) Non Credit Compulsory Courses

Sr. No.	Course No.	Course Title	Credits
2.	PGS 502	Technical Writing and Communications Skills	1(0+1)
6.	PGS 506 (e-Course)	Disaster Management	1(1+0)

3. Ph. D.

A) Supporting Subjects

Sr. No.	Course No.	Course Title	Credits
1.	BSCT 601	Object Oriented Programming	3(2+1)
2.	MATH 601	Mathematical Modelling and Software Applications	3(1+2)

A) Non Credit Compulsory Courses*

Sr. No.	Course No.	Course Title	Credits
2.	PGS 502	Technical Writing and Communications Skills	1(0+1)
6.	PGS 506 (e-Course)	Disaster Management	1(1+0)

* exempted if completed in Masters degree

Laboratories:

Name of the Lab	Area (sq. ft.)	List of the equipments/ machineries	Subject / Experiential learning for which it is being used
Electrical Engg.	1841	AC/DC electrical moters, Transformers, Elect. Measuring Instruments	Electrical Engg. Courses
Electronics Engg.	1841	Instrumentation tutors, Controller kit, Electronic kit	Electronics & Instrumentation courses
Civil Engg.	1841	Spring Testing machine, Testing equipment	Civil Engg. courses
Computer	1841	Computers, Scanner, Printer	Computer Engg. courses



Electrical Engineering Laboratory



Computer Laboratory



Electronics Engineering Laboratory



Civil Engineering Laboratory



Electrical Engineering Laboratory



Electrical Engineering Laboratory

Research Publications:

Research Papers published in International Journals

P.R. Shinde, A. B. Lende, S.V. Rane, S.A. Nawale, Mrs. M. S. Patwardhan, L.V. Gharate 2009. Development and Functional Test of electronic Metering Mechanism for Bullock Drawn Jyoti Multi crop Planter International Journal of Agriculture Environment and Bio technology ISSN No. 0974 -1712 Vol. 2 (No. 3) ,pp.305 to 309.

Mrs. M. S. Patwardhan 2011. Energy Conservation at Plant Tissue Culture Biotechnology Laboratory International Journal of Agriculture Environment and Bio technology ISSN No. 0974 -1712 Vol.4 (N0.1), pp 83- 87

Mrs. M. S. Patwardhan, W.Z. Gandhare 2013. High Voltage Electric Field Effects on the Germination Rate of Tomato Seeds Journal Acta Agrophysics 20(2) volume 2013 ISSN 1234-4125

W.Z. Gandhare Mrs. M. S. Patwardhan 2014. A New Approach of Electric Field Adoption for Germination Improvement Journal of Power and Energy Engineering dx.doi.org/10.42.4236/jpee.2014.24003

Mrs. M. S. Patwardhan, W.Z. Gandhare 2016. Improving Germination of Tomato Seeds by Electric Field Treatment International Journal of BioScience, Agriculture and Technology Vol. 7, Issue 1, Page(s): 1-6. ISSN 0975 - 4539 IJBSAT (2016), 7(1): 1-6.

Research Papers Published in National Journals

Mrs. M. S. Patwardhan, Prof. TRV Naidu 2006. Assessment of Agricultural Electric motors Maintenance Energy & Fuel Users' Journal Volume – LVI, Book 3, pp. 1-9.

Mrs. M. S. Patwardhan 2009. Assessment of Energy Conversion in Agriculture and Industry Through Starters. Energy & Fuel Users' Journal Volume – LIX, Book 1, pp. 24 -31.

Mrs. M. S. Patwardhan 2009. Renewable Development: New Strategies for Rural India Energy & Fuel Users' Journal Volume – LIX, Book 2, pp. 12-17

Mrs. M. S. Patwardhan 2010. Assessment of Pumping System in Rahuri Region (Research note) Journal of Maharashtra Agricultural University ISSN 0378-2395 Vol. 35, No.3, pp.482 - 485.

Mrs. M. S. Patwardhan 2010. Design and Development of an ON/ OFF Controller for Sprinkler System Based on Humidity Content Energy & Fuel Users' Journal Volume – LX, Book 2, pp. 1-6.

Mrs. M. S. Patwardhan, A.M.Lahange, N.S. Gaikwad, A.A.Mane, S.S. Kolhe 2011. Alternate Energy Possibilities For Rural Development – A Case Study: Wadgaon Amli e NREE , TERI Vol. 8, issue 2, pp. 3 –7.

Mrs. M. S. Patwardhan, W.Z. Gandhare 2013. Effect of Electricity on Seed Germination IEEMA Journal Vol. 5, Issue No.2, October 2013 ISSN 0970-2946

Full length Research Papers in the Proceedings of International Conferences/ Seminars

Mrs. M. S. Patwardhan 2010. Assessment of Energy Conservation – A Case Study Proceedings of International Conference ICEOC -2010 pp. 33-36

Mrs. M. S. Patwardhan, W.Z. Gandhare 2013. Enhancement of Seed Germination by Applying Electrostatic Field Indicon: IEEE & IIT Bombay IEEE 978-1-4799-2274-1DOI 101109/ INDICON.2013.6726052

Full length Research Papers in the Proceedings of National Conferences/ Seminars

Mrs. M. S. Patwardhan 2008 Renewable Energy Scenario: Changing Face of Rural India Non Conventional Energy Sources & Urban/ Rural Economy Nagpur p.p. 14 –18

Mrs. M. S. Patwardhan 2008 Acceleration of Seed Germination by Applying Electric Fields: A Review Recent advances in engineering Souvenir of All India Seminar CO – GEN 2008 Panhala ISBN 978-93-82062-39-4 pp. 257- 262

Mrs. M. S. Patwardhan 2015 Barriers for utilization of solar photovoltaic technology for rural community National Convention, IEL, Bhopal ISBN: 978-93-83635-95-5 pp. 73-78

Mrs. M. S. Patwardhan, W.Z. Gandhare 2012. Rural Electrification: Renewable Energy Grid Integration Approach National Conference at AISSM'S COE, Pune

Mrs. M. S. Patwardhan, W.Z. Gandhare 2013. Electro - Culture Technology for Rural Development National Conference at RIT, Islampur

Mrs. M. S. Patwardhan, W.Z. Gandhare, R.D. Bansod 2016. Enhancing Agricultural Productivity through Microwave Treatment for Germination Improvement All India Seminar at Institutions of Engineers (ALC) , Ahmednagar

Mrs. M. S. Patwardhan 2018. Opportunities of Energy Conservation in Agricultural Sector National Electrical Engineering Conference at Guru Nanak Dev Engineering College, Ludhiyana. ISBN 978-93-5346-161-4 pp.18 -21

Mrs. M. S. Patwardhan 2019. Challenges of Utilization of Municipal and Agro Waste for Electricity Generation All India Seminar at Vrindavan Hall, Raipur organized by The Institution of Engineers (India), Chhattisgarh State Centre

Faculty:

Sr. No.	Name	Designation
1.	Dr. K.J. Kamble	Head
2.	Dr. Mrs. S. U. Bhoite	Assistant Professor (Mathematics)
3.	Dr. Mrs. M.S. Patwardhan	Assistant Professor (Electrical Engineering)
4.	Prof. S. U. Fulsawange	Assistant Professor (English)
