



College of Agricultural Engineering & Technology

ACCREDITATION STATUS

(1) U.G. -B. Tech. (Agril. Engg.) - Programme

- Accredited by the Indian Council of Agricultural Research (ICAR), New Delhi in 1997 and 2016-2021.
- Accredited by Institution of Engineers (India) Kolkata in 2000.
- Accredited by the All India Council For Technical Education (AICTE - NBA), New Delhi for a period of 5 years (July, 2008 to July, 2013).
- Good Ranking Since a decade by GHRDC Survey of all Engineering Colleges of India published every year in July Edition of Competition Success Review (CSR). In year 2020 ranked 2nd in Gujarat and 22nd in Outstanding Engineering colleges of Excellence of India.

(2) P. G. Programmes

- Accredited by the Indian Council of Agricultural Research (ICAR), New Delhi for a period of 5 years (28/03/2016 to 27/03/2021)
- **M.Tech.** : In discipline of Farm Machinery and Power Engineering, Soil and Water Engineering, Processing and Food Engineering and Renewable Energy Engineering.
- **Ph.D** : In discipline of Farm Machinery and Power Engineering, Soil and Water Engineering, Processing and Food Engineering, Renewable Energy Engineering



JUNAGADH AGRICULTURAL UNIVERSITY

JUNAGADH - 362 001.

2021



ABOUT THE COLLEGE

The Agricultural Engineering plays an important role in increasing production and productivity of agricultural crops, thereby, increasing the income of farmers. The timeliness of farm operation through efficient agricultural implements and machinery as well as appropriate land and water management activities along with efficient post harvest technology & processing and efficient energy utilization are the important areas in which Agricultural Engineering profession has been playing major role.

Considering the importance of Agricultural Engineering, the Government of Gujarat has approved the College of Agricultural Engineering and Technology and it was started in March, 1984 at Junagadh as the constituent college of Gujarat Agricultural University with the broad mandate of teaching, research and extension education in agricultural engineering.

With the bifurcation of Gujarat Agricultural University into four universities with effect from 1-5-2004, now the college (CAET) is one of the constituent colleges of Junagadh Agricultural University, Junagadh. The Junagadh Agricultural University Campus is located in the heart of Junagadh city at about 4 km from Railway Station and 3 km from S.T. Bus Station.

The college building spread in 6 ha land. The total building area is 18418 sq.m. In addition to this, an instructional farm of about 34 ha is maintained with modern agricultural machinery & implements, Irrigation Technology, MIS, Green House, Renewable Energy utilization for UG & PG Students and demonstration for the farmers.

The college has well developed laboratories, modern class rooms, computer laboratory and seminar halls & PG Classrooms in all the departments of the college. The computer laboratory has internet connectivity with about 100 computers in the laboratory, so that the students can have Internet access for academic and research purposes. It also has various technical Softwares such as IDRIS, GeoMatica, Hydromat, MIKESHEE, Basins, CAD-CAM etc. The innovative technology, Artificial Intelligence (AI), Machine Learning, Application of Robotics and Drones in agriculture in introduced in the course curriculum and advanced laboratories are developed under IDP of NAHEP of ICAR. Every year the talented students and learned faculty will get an opportunity to visit universities in abroad for training and exposers of advanced technology.



PROGRAMMES OFFERED

Sr. No.	Degree Programme	Field of Specialization	Duration	Intake Capacity	Year of Starting
Under Graduate Programme					
1	B. Tech.	Agricultural Engineering	4 Years	86+ 13 (ICAR Nominees)	1984
			3 Years (Diploma to Degree)	09	2011
Admission Requirement for B. Tech. (Agril. Engg.) : (1) Std. XII passed science stream with minimum 40% marks (35% for reserve categories) in physics, chemistry and mathematics. (Theory Only) (2) Admission - On merit basis (60% weightage of Board Exam + 40% Weightage of GUJCET) (3) 85% seats for state and 15% seats through ICAR All India Entrance Examination for Agriculture (AIEEA) (4) Diploma in Agricultural Engineering and allied discipline candidates are admitted in third semester through entrance test (Weightage : Diploma grades 50 % + Entrance test 50 %)					
Post Graduate Programme					
2	M.Tech.	1 Farm Machinery and Power Engineering	2 Years (4 Semester) for full time, 3 Years (6 Semester) for in-service	8 + 3-ICAR	1994
		2 Soil and Water Engineering		8 + 3-ICAR	
		3 Processing and Food Engineering		5 + 2-ICAR	
		4 Renewable Energy Engineering		1	
	Ph. D.	1 Soil and Water Engineering	3 Years (6 Semester) for full time, 5 Years (10 Semester) for in-service	2 + 1-ICAR	2001
		2 Farm Machinery and Power Engineering		4 + 1-ICAR	
		3 Processing and Food Engineering		2 + 1-ICAR	
		4 Renewable Energy Engineering		1	
Admission Requirement for M. Tech., Ph. D. (Agril. Engg.) : (1) For M.Tech. - OGPA of not less than 6.00(5.5 for reserve categories) (10.00 basis) in B. Tech. For Ph.D. - OGPA of 6.50 (6.00 for reserve categories) in M. Tech. (2) Written test of 100 marks (3) Merit : 50% of OGPA + 50 % of entrance test marks for state seats. (4) 75 % state seats and 25% seats through ICAR All India Entrance Examination for Agriculture (AIEEA)					



STAFF POSITION

Principal & Dean : Dr. N. K. Gontia, Ph.D.(Ag.Engg.), SWCE

Department of Farm Machinery and Power Engineering

Sr. No.	Name	Designation	Qualification
(I) Departmental Staff			
1	Dr. K. K. Jain	Prof. & Head	Ph.D. (Ag.Engg.), FMPE
3	Dr. T. D. Mehta	Asstt. Prof.	Ph.D. (Ag.Engg.), FMPE
4	Prof. A. L. Vadher	Asstt. Prof.	M. Tech.(Ag.Engg.), FMPE
5	Prof. P. P. Gajjar	Asstt. Prof.	M. Tech.(Ag.Engg.), FMPE
6	Prof. N. B. Parmar	Asstt. Prof.	M. Tech.(Ag.Engg.), FMPE

Sr. No.	Name	Designation	Qualification
7	Er. P. R. Mathukia	Agril. Officer	B.Tech., MBA (AB) / ABM
8	Er. H. R. Shekhada	Lab. Tech.	Diploma in Mechanical
(II) AICRP on Farm Implements and Machinery			
9	Dr. K. B. Jhala	Assoc. Prof.	Ph.D. (Ag.Engg.), FMPE
10	Er. R. D. Bandhiya	Agril. Asstt.	M. Tech.(Ag.Engg.), FMPE
11	Er. K. H. Narola	Agril. Asstt.	B. Tech.(Ag.Engg.)

Department of Soil & Water Conservation Engineering

(I) Departmental Staff			
1	Prof. R. P. Maraviya	Prof. & Head	M.Tech, (Agril. Engg.), SWE
2	Prof. H. H. Mashru	Asstt. Prof	M.Tech, (Agril. Engg.), SWE
(II) Instructional farm, CAET, JAU, Junagadh			
3	Dr. J. M. Modhvadhya	Farm Manager	M.Sc. (Agri.)
4	Er. P. J. Bagada	Tech. Asstt.	B.Tech (Agril. Engg.)
5	Mr. ManojBalas	Agri.Asstt.	B. Sc. (Ag.)
(III) Center for Remote Sensing and Geoinformatics in Agriculture (BH: 12024)			
6	Dr. H. V. Parmar	Assoc. Prof.	Ph.D. (Agril. Engg.), SWE

7	Er. H. N. Dalsania	Tech. Asstt.	B.Tech (Agril. Engg.)
8	Mr. A. K. Vaghela	Agril. Officer	B.Sc
9	Mr. G. K. Majethiya	Agri.Asstt.	Diploma (Ag.)
(IV) AICRP on Irrigation Water Management			
10	Dr. H. D. Rank	Res. Engg.	Ph.D. (Agril. Engg.), SWE
11	Prof. P. B. Vekaria	Asstt. Prof.	M.Tech (Agril. Engg.), SWE
12	Dr. R. J. Patel	Asstt. Prof	Ph.D. (Agril. Engg.), SWE
13	Shri. Y. H. Hala	Lab.Asstt./ Field Asstt.	ITI Motor mechanic Vehicle
14	Shri. M. G. Patoliya	Messenger	9 th Pass

Department of Processing & Food Engineering

1	Dr. M. N. Dabhi	Prof. & Head	Ph.D.(Ag. Engg.), PFE
2	Dr. V. K. Chandegara	Assoc. Prof.	Ph.D.(Ag. Engg.), PFE
3	Prof. V P. Sangani	Asstt. Prof.	Ph.D(Ag. Engg.), PFE
4	Prof. D. K. Gojiya	Asstt. Prof.	M.Tech. (Ag. Engg.), PFE
5	Prof. B. M. Devani	Asstt. Prof.	M.Tech. (Ag. Engg.), PFE
6	Prof. G.S. Kharadi	Asstt. Prof.	M.E. (Elec. Engg.)
7	Prof. G. D. Gohil	Asstt. Prof.	M.E. (Comp. Engg.)

(II) AICRP on Post Harvest Engineering & Technology			
8	Dr. M. N. Dabhi	Assoc. Proff.	Ph.D (Ag. Engg.), PFE
9	Prof. R. D. Dhudesia	Asstt. Prof.	M.Sc. (Ag. Ento.)
10	Dr. P. R. Davara	Asstt. Prof.	Ph.D. (Ag. Engg.) / PFE
11	Dr. S. P. Cholera	Asstt. Prof.	Ph.D. (Ag. Engg.), PFE
12	Prof. A. M. Joshi	Asstt. Prof.	M.Sc. (Microbiology)
13	Er. H. R. Sojaliya	Sr. Tech. Asstt.	M.Tech. (Ag. Engg.), PFE
14	Er. G. G. Monapara	Tech. Assist.	B.Tech (Agril. Engg.)

Department of Renewable Energy Engineering

(I) Departmental Staff			
1	Dr. P. M. Chauhan	Prof. & Head	Ph. D.(Ag. Engg.), REE
2	Prof. S. K. Mandaviya	Assoc. Prof.	M. A. (English)
3	Prof. H. J. Vyas	Assoc. Prof.	M. Sc. (Physics)
4	Prof. N. K. Mistry	Assoc. Prof.	M. Sc. (Maths)
5	Dr. M. S. Dulawat	Asstt. Prof.	Ph. D. (Ag. Engg.), REE
6	Prof. M. J. Gojiya	Asst. Prof.	M. Tech (Ag. Engg.), REE

7	Prof. S. V. Kelaiya	Asst. Prof.	M.Tech (Ag. Engg.), REE
8	Prof. D. S. Thanki	Asst. Prof.	M.E. (Civil)
9	Er. K. G. Vaja	Tech. Asst	M. Tech (Ag. Engg.), REE
(II) AICRP on Plasticulture Engineering & Technology			
10	Dr. R. M. Satasiya	Res. Engg.	Ph. D.(Ag. Engg.), SWE
11	Er. J. V. Bhuvu	Tech. Asstt.	B. Tech. (Ag. Engg.)

Department of Agricultural Engineering Extension Education

1	Dr. K. K. Jain	Prof. & Head	Ph. D.
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2	Er. P. R. Mathukia	Agril. Officer	B.Tech., MBA (AB) / ABM
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DEPARTMENTS OF THE COLLEGE

(1) DEPARTMENT OF FARM MACHINERY AND POWER ENGINEERING

The Department of Farm Machinery and Power Engineering was started in the year 1984. The main aim of the department is to strengthen the Agricultural Engineering faculty by carrying out teaching, research and extension education activities in the areas of Farm Machinery, Farm power, Ergonomics and Farm Mechanization, Application of Robotics, Drone in Agriculture.

The department has more than 10 laboratories and workshops well equipped with advanced equipments

Laboratories :-

1. Implement and Engine System Models laboratory 2. Tillage and Traction laboratory 3. Post Tillage equipments laboratory 4. Plant protection equipments laboratory 5. Engineering Drawing laboratory 6. Computer Cell 7. Seminar Hall 8. Departmental Library / Training Hall 9. Thermodynamics and Air Conditioning laboratory 10. Engineering Mechanics laboratory 11. Black-smithy / Welding / Moulding shop 12. Machine Shop

13. Fitting Shop 14. Carpentry Shop 15. Robotics Laboratory 16. Drones Laboratory 17. Machine Learning Laboratory

The department has a Government recognized "Testing and Training Centre of Farm Machinery". where farm machinery, implements and tools are tested as per BIS standards test code and certification is done. The department also has a research scheme "All India Coordinated Research Project (AICRP) on Farm Implements and Machinery (FIM)", where need based project on Research & Development, Prototype Feasibility Testing and Front Line Demonstrations of Farm Implements and Machinery are conducted.

The Farm Machinery & Power Engineering department organises Agricultural Fairs, Farmers meeting, Khedul Sibir as well as Radio and T.V. talk, and demonstration of Agril. Machines/ Implements to the farmers, The workshop and short term training programmes are also arranged. The developed technologies are transferred to the farmers through extension activities.



(2) DEPARTMENT OF SOIL AND WATER CONSERVATION ENGINEERING

The main aim of the department is to carry out teaching, research and extension education activities in the areas of Soil and Water Engineering. The department offers M. Tech. (Agril. Engg.) and Ph. D. (Agril. Engg.) since 1994 and 2001 respectively with specialization in Soil and Water Engineering which includes the fields of Soil and Water Conservation, Irrigation Water Management, Drainage Engineering, Hydrology, Watershed Management, Ground Water Hydrology, Irrigation Systems and Pumps, drought analysis, hydrologic modeling and Remote Sensing and GIS.

Department has 14 well equipped laboratories for UG and PG studies. In addition to that a fully mechanized instructional farm having area 35.0 ha for conducting research and practical. The laboratories are : 1) Irrigation Systems Laboratory 2) Pump Testing Laboratory 3) Wells and Pumps Engineering Laboratory 4) Fluid Mechanics Laboratory 5) Soil Mechanics Laboratory 6) Soil Conservation Laboratory 7) Hydrology laboratory 8) Drainage laboratory 9) Remote sensing & GIS 10) Water Quality analysis Laboratory, 11) Hydraulic park 12) High Tech MIS Park 13) Soil conservation field laboratory (Runoff- Soil erosion measurement structure) 14) Instrumental Cell

Till, now the department had completed 7 research projects with beneficial Research Outcomes. (1) National

watershed development project (2) Studies on techno economic feasibilities of drip irrigation. (3) Demonstration cum research center for petroleum conservation. (4) Development of models for water management in groundnut based cropping systems. (5) Relationship between root and plant, soil properties and the discharge for drip irrigation system. (6) Smart Farming for Increasing Agricultural Production in Sodic Soils of Coastal Area (RKVY). (7) National Initiative for Climatic Resilient Agriculture (NICRA), ICAR Project

The department has total 6 ongoing projects on research as well education:

- 1 Establishment of Instructional Farm for College of Agricultural Engineering and Technology
- 2 Strengthening of Instructional farm at college of Agricultural Engineering and Technology.
- 3 Research on Watershed Management.
- 4 All India Coordinated Research Project (AICRP) on Irrigation Water Management.
- 5 River Flow Simulations Integrating Satellite Data in Forested Catchment.
- 6 Center of Remote sensing and Geoinformatics in agriculture (BH: 12024)



(3) DEPARTMENT OF PROCESSING AND FOOD ENGINEERING

The department offers various courses related to Post Harvest Technology such as Drying and Dehydration; Heat and Mass Transfer; Seed Technology; Storage Engineering; Engineering Properties of Biological Materials; Electrical Engineering; Processing of Cereals, Pulses and Oilseeds; Processing of Fruits and Vegetables; Computer Engineering, Plant Design and Layout etc. to the UG and PG students. Besides teaching several research/projects such as All India Coordinated Research Project on Post-Harvest Engineering Technology, Post-Harvest Technology of Important Crops of Saurashtra, Development of Protocols for Procurement, Safe Storage and Milling Outturn of Major Pulses (DoCA Project) is also running under this Department.

The department is also associated with extension education activities related to post harvest operations of cereals, pulses oilseed fruits & vegetables. The department is also having in plant training facilities for students/entrepreneur like Canning of fruits

and vegetables, tomato processing line, low temperature storage system for perishables, pulse processing plant etc. Department consist different laboratory in the field of Electrical Engineering Laboratory, Computer Engineering Laboratory, Biochemistry Laboratory, Microbiology Laboratory, Size Reduction and Milling Laboratory, Drying Laboratory, Storage Engineering Laboratory, Crop Process Engineering Laboratory, Engineering Property Laboratory, etc. for practical and research purpose.

Rural Agro Processing Centres run by the AICRP on Post-Harvest Engineering and Technology (ICAR) at Various Villages are the ongoing demonstration centre for value addition and income generation to the farmers. The department has a pilot pulse mill, where Tuar Dal milling is done with enzymatic treatment to reduce the milling time and increasing milling efficiency. It also provides latest know how on post-harvest aspects of various crops.



(4) DEPARTMENT OF RENEWABLE ENERGY ENGINEERING

The main aim of the department is to carry out teaching in the areas of Renewable Energy Engineering, Civil Engineering and Basic Sciences & Humanities as well as research and extension education activities in the areas of Renewable Energy Engineering.

The faculty of the department is mainly engaged in teaching of UG and PG courses under B.Tech. (Ag. Engg.) and M.Tech. (Ag. Engg.) programme.

Laboratories :-

1. Solar Energy Lab.
2. Bio-Energy Lab.
3. Wind Energy Lab.
4. Experiential learning for Production and Management of RSE Lab.
5. Civil Engineering Lab.
6. Chemistry Lab.
7. Physics Lab.
8. Language Lab.
9. Plasticulture Engineering & Technology, Innovative Technology in Renewable Energy.



(5) DEPARTMENT OF AGRICULTURAL ENGINEERING EXTENSION EDUCATION

The Department of Agricultural Engineering Extension Education is to disseminate the accumulated knowledge for real time adoption and to establish a good linkage between the researchers and farmers for the transfer of technology. The department is coordinating the organization of short term training programmes for the farmers and the technicians in addition to participation in the training courses organized by SSK and FTC, Junagadh. A hightech exhibition hall has been established in the college which exhibits the different working

models, charts and specimens related to agricultural engineering. The department is exhibiting the technology developed by the various departments of the college in Krushi Mahotsav and other Krushi Mela and Krushi Shibire organized by the University.

From year 2018 two New Deaprtments are established.

- (i) Department of Irrigation and Drainage Engineering
- (ii) Department of Basic Engineering & Applied Sciences



RESEARCH

The multi-disciplinary research work is carried out in the college under the following research projects / schemes funded by Government of Gujarat as well as Indian Council of Agricultural research

- All India Coordinated Research Projects on Farm Implements & Machinery
- All India Coordinated Research Projects on Irrigation Water management
- All India Coordinated Research Projects on Post-Harvest Engineering & Technology
- All India Coordinated Research Projects on Plasticulture Engineering and Technologies
- Development of Protocols for Procurement, Safe Storage and Milling Outturn of Major Pulses (DoCA Project)
- Consortia Research Platforms (CRPs) on Energy from Agriculture
- Research on Post Harvest Technology of Important Crops of Saurashtra region

- Centre of remote sensing and Geo informatics in Agriculture.
- Strengthening of Dept. of Renewable Energy & Rural Engg.
- Development of Protocols for Shelf Life, Safe Storage, Milling Outturn and Indicative Norms for Procurement of Major Pulses.
- Enzymatic pre-treatment in the Processing of Pigeon Pea.
- Studies on storage losses of food grain ICAR-FCI project.
- RKVY- Testing and Training Centre of farm implements
- Instructional farm of college of Agricultural Engineering & Technology
- River Flow Simulations Integrating Satellite Data in Forested Catchment
- Watershed management research.
- The research achievements in terms of the number of recommendations released for the benefit of farmers and industry /entrepreneurs, by the university based on the research findings of different discipline - 98.



TRANSFER OF TECHNOLOGY

The main extension education activities of the college includes the extension of research findings to the farmers, to know their feedback for future research as well as demonstrate the new technology developed in Agricultural Engineering. The activities like farm visit, village meetings, conferences, agricultural fairs and exhibitions are organized. The college has given 81 farmers recommendations which includes release of Farm Implements and Machinery. The experts (teachers / scientists) of Agricultural Engineering faculty are also providing the guidance to farmers through radio and television on the topics related to various subjects. This college has organized several seminars / workshops / conferences of state and national level in different disciplines of agricultural engineering. The faculty members and technical staff of the college actively participating in "Krushi Mahotasav" a mass communication one month

programme of Government of Gujarat.

1. Instructional Farm :

The department is maintaining 34 ha instructional farm for demonstration of agricultural technologies, especially Farm Mechanization, soil and water management, renewable energy, protective cultivation and Value addition to the students and farmers as well as for conducting research on various crops. The instructional farm consisting of sapota and mango, coconut, Black Jamun, Lemon and custard apple under drip irrigation. Beside this various water harvesting structures such as drop inlet, drop structure, check dams, runoff plots and well recharge structure with filter are constructed on farm for water harvesting and demonstration purpose.



2. Experiential Learning Units:

S N	Title of the E L Unit	Location	Year of Start	Nodal Person	No. of Students Trained
1	Design, Planning and Evaluation of Watershed	Department of Soil and Water Conservation Engineering CAET, JAU, Junagadh	2006-07	Dr. H. H. Mashru Assistant Professor, Department of Soil and Water Conservation Engineering, CAET, JAU, Junagadh, E-mail : hhmashru@jau.in, swe@jau.in Mobile:9426266590 / 8849240076	454
2	Production & management of alternative / renewable sources of energy	Dept. of Renewable Energy Engg., College of Agricultural Engineering & Technology, JAU	2006-07	Prof. S. V. Kelaiya Assistant Professor, Department of Renewable Energy Engg., CAET, JAU, Junagadh, E-mail : sagarkelaiya@jau.in Mobile:9033617809	192
3	Hands on training on Agro Processing Centre for value addition technologies and technical Support services	Department of Processing and Food Engg., College of Agricultural Engineering and Technology, JAU, Junagadh	2008-09	Dr. M. N. Dabhi Professor and Head, Processing and Food Engineering Department, College of Agricultural Engineering and Technology, JAU, Junagadh Email: pfe@jau.in Mobile No. 9979793668	536



3. Testing and Training Centre of Farm Machinery:

The "Testing and Training Centre of Farm Machinery" was established in August-2008 by State Govt. with the help of Central Govt. (RKVY) for testing and training of farm machinery in the Gujarat state, out of 30 centers this is the only centre in Gujarat

where the manufacturers of Farm Implements and Machinery may get their implements tested as per BIS Test Codes and may improve design performance accordingly. This centre has tested 1282 implements and their reports are released.

Testing of Farm Equipments

Year	2008-09 to 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Implements Tested	577	102	112	144	124	125	98	1282

About Rs. 590.86 lakhs has been deposited to Uni. Fund. Account Now the testing centre has become financially self-

dependent. The testing revenue will meet the financial requirement like recurring expenditure, staff salaries, diesel, etc.



Testing of Mulch Laying Machine

Thresher Testing on Field

Field Testing on Farm- Potato Digger

Testing of Hand Tools- Wheel Hoe Tools

4. Rural Agro Processing Centers :

For value addition and employment generation at rural level, the college established five Rural Agro Processing Centres at Villages Tadka Pipaliya (Ta. Bhesan Dist. Junagadh), Virol (Ta. Mangrol, Dist. Junagadh), Loej (Ta. Mangrol, Dist. Junagadh),

Vadala (Ta. Talala, Dist. Gir Somnath) and Chotila (Dist. Rajkot) with the financial assistance from ICAR (under AICRP on PHET). All these centres are working successfully and paid back the amount invested.



STUDENTS' WELFARE ACTIVITIES

Training and Placement Cell

The cell is coordinating the Skill Development trainings for the students by sending them in different public and private sector organizations for getting the hands on trainings for skill development through practical work in the areas like operation, repair and maintenance of tractor and farm implements, soil and water conservation, micro irrigation systems, food processing and

renewable energy technology. Also, the placement of outgoing students is made through holding campus interviews by inviting leading employers of state and national level. In 12 years, 100 % interested graduates obtained the placement through campus interviews except those who prefer higher studies or self-entrepreneurship.

Placement of B. Tech. (Agril. Engg.) Graduates

Year	No. of graduates passed	Placement				Higher studies
		SAU	Bank / Semi Govt./ NGO	Private Firms	Self Employed	
1988-2017	1157	50	57	704	73	273
2018	94	0	0	22	17	55
2019	87	0	0	20	15	52
2020	83	0	1	24	9	49
Total	1421	50	58	770	114	429

Placement of PG students (M.Tech. & Ph.D.)

Discipline	Farm Machinery & Power Engg.	Soil and Water Engineering	Processing & Food Engineering	Renewable Energy Engineering	Total
1996 to 2017	60	69	83	14	226
2018	12	9	6	3	30
2019	11	10	6	2	29
2020	1	1	1	0	3
Total	84	89	96	19	288



Students During Placement

Student Counseling Cell

A cell is looking after the counselling activities by guiding the students regarding the preparation for competitive examinations like GATE, CAT, GCET, JRF, etc. Also the guidance for

entrepreneurship development is given. The special talks and lectures of the eminent personalities / experts are arranged for the benefit of students and staff.

National Service Scheme (NSS)

National Service Scheme is functioning actively in the college since last 30 years. Every year the students of 1st and 2nd year of B.Tech (Agril. Engg.) are registered as volunteers for NSS and various activities carried out during the year. NSS activities have been divided in two major groups; these are regular NSS activities and special camping programme.

Under Regular NSS activity Volunteers students undertake various programmes in the adopted villages, college / school campuses and urban slums during weekends or other college hours such as, Celebration of the Independence day and Republic Day, Blood donation camp, International Day of Yoga, Swachhh Bharat Abhiyan, Plantation Programme, Thalassemia Screening



Programme, Demonstration of Cashless Transactions under "Digital India", Celebration of International Women's Day, Lectures on Water Conservation and Disaster Management etc.

Under Special Camping Programme a camp of 7 days duration is organized in adopted village with some specific objectives by involving local communities. It provides unique opportunities to the students for group-living, collective experience sharing and constant interaction with community.

Institutional Development Plan (IDP) Cell

The University has awarded the International Development Plan (IDP) from ICAR funded by World bank under National Agricultural Higher Educations Programme (NAHEP) of Rs. 3000 lakhs. Under this project the courses of Robotics and Drones application in Agriculture, Artificial Intelligence and Machine Learning are introduced in course curriculum.



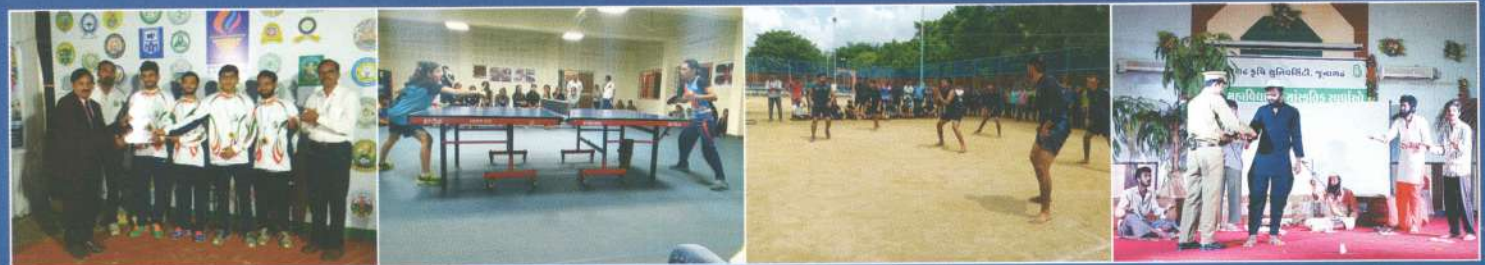
Total 9 students have been sent abroad for international training in USA and Thailand under world bank project. Under IDP total 1918 students have been trained through total 36 trainings of different skill improvement. Following Advanced Laboratories have been established under the plan:



Gymkhana (Students Representative Council)

Gymkhana (Students Representative Council) is organizing the games & sports activities through out the year for UG & PG Students. NSS is a compulsory course for UG Students; It helps to develop discipline, skillness, social and environmental awareness in the students. Gymkhana has a Students Representative Council (SRC) which provides a link between students and the college administration to solve the request, problem or need that rises from students. It also strives to aid the management in improving the college service for the welfare and benefits of students.

Gymkhana also plan events in association with Directorate of Students' welfare, Junagadh Agricultural University to encourage better relations among other students as well as to promote positive attitude and encourage students participation in co-curricular activities such as sports, cultural, literary competitions. The other responsibilities of Gymkhana includes providing moral support and assistance to sub committees of SRC. It also organize different national and religious festivals, annual day of college and specific Days declared by UNO.



Students During Different Sports & Cultural Activities

CAET Alumni Association

The alumni association of the college has been formed in September, 2003 and registered. The association is actively involved in providing the opportunities to the alumni to interact on the issues pertaining to the development of agricultural engineering profession and offering technical and social services

as per its mandate and objectives which include providing financial assistance to the poor students. The conventions are organized periodically for Alumni meet. At present CAET Alumni Association has total 1500 members.



Glimpses of Alumni Association Meet



COURSE CURRICULUM

In faculty of Agricultural Engineering & Technology, the programmes of the B-Tech (.Agril. Engg.), the national level

common syllabus of ICAR as per the recommendations of the fifth Deans' committee is approved and implemented Since 2017-18.

The semester wise subjects offered for the B-Tech. (Agril. Engg.) Programme are given below.

Course No.	Title of the Course	Credit Hour
Semester I		
Math(E)-1.1.1	Engineering Mathematics-I	3(2+1)
Phy(E)-1.1.2	Engineering Physics	3(2+1)
Chem(E)-1.1.3	Engineering Chemistry	3(2+1)
Ag(E)-1.1.4	Principles of Soil Science	3(2+1)
CE-1.1.5	Surveying and Levelling	3(1+2)
CE-1.1.6	Engineering Mechanics	3(2+1)
ME-1.1.7	Engineering Drawing	2(0+2)
ME-1.1.8	Heat and Mass Transfer	2(2+0)
Phy. Edu.-1.1.9	NSS/NCC/Physical Education	0(0+1*)
Total		22(13+9)
Semester II		
Math(E)-1.2.1	Engineering Mathematics-II	3(2+1)
AS(E)-1.2.2	Environmental Science and Disaster Management	3(2+1)
AS(E)-1.2.3	Entrepreneurship Development and Business Management	3(2+1)
CE-1.2.4	Fluid Mechanics and Open Channel Hydraulics	3(2+1)
CE-1.2.5	Strength of Materials	2(1+1)
ME-1.2.6	Workshop Technology and Practices	3(1+2)
ME-1.2.7	Theory of Machines	2(2+0)
CSE-1.2.8	Web Designing and Internet Applications	2(1+1)
Phy. Edu.-1.2.9	NSS/NCC/Physical Education	0(0+1*)
Total		21(13+8)
Semester III		
Ag(E)-2.3.1	Principles of Horticultural Crops and Plant Protection	2(1+1)
Ag(E)-2.3.2	Principles of Agronomy	3(2+1)
AS(E)-2.3.3	Communication Skills and	2(1+1)
Math(E)-2.3.4	Engineering Mathematics-III	3(2+1)
CE-2.3.5	Soil Mechanics	2(1+1)
CE-2.3.6	Design of Structures	2(1+1)
ME-2.3.7	Machine Design	2(2+0)
ME-2.3.8	Thermodynamics, Refrigeration and Air Conditioning	3(2+1)
EE-2.3.9	Electrical Machines and Power Utilization	3(2+1)
Phy. Edu. – 2.3.10	NSS/NCC/Physical Education	0(0+1*)
Total		22(14+8)

Course No.	Title of the Course	Credit Hour
Semester IV		
CE-2.4.1	Building Construction and Cost Estimation	2(2+0)
ME-2.4.2	Auto CAD Applications	2(0+2)
EE-2.4.3	Applied Electronics and Instrumentation	3(2+1)
FMPE-2.4.4	Tractor and Automotive Engines	3(2+1)
PFE-2.4.5	Engineering Properties of Agricultural Produce	2(1+1)
SWCE-2.4.6	Watershed Hydrology	2(1+1)
IDE-2.4.7	Irrigation Engineering	3(2+1)
IDE-2.4.8	Sprinkler and Micro Irrigation Systems	2(1+1)
REE-2.4.9	Fundamentals of Renewable Energy Sources	3(2+1)
Phy.Edu.-2.4.10	NSS/NCC/Physical Education	0(0+1*)
Total		22(13+9)
V Semester		
FMPE-3.5.1	Farm Machinery and Equipment-I	3(2+1)
FMPE-3.5.2	Tractor Systems and Controls	3(2+1)
PFE-3.5.3	Agricultural Structures and Environmental Control	3(2+1)
PFE-3.5.4	Post Harvest Engineering of Cereals, Pulses and Oil Seeds	3(2+1)
SWCE-3.5.5	Soil and Water Conservation Engineering	3(2+1)
SWCE-3.5.6	Watershed Planning and Management	2(1+1)
IDE-3.5.7	Drainage Engineering	2(1+1)
REE-3.5.8	Renewable Power Sources	3(2+1)
CAE-3.5.9	Skill Development Training-I (Student READY) Registration only	5(0+5)
Total		27(14+13)

Course No.	Title of the Course	Credit Hour
VI Semester		
CSE-3.6.1	Computer Programming and Data Structures	3(1+2)
FMPE-3.6.2	Farm Machinery and Equipment-II	3(2+1)
PFE-3.6.3	Post Harvest Engineering of Horticultural Crops	2(1+1)
SWCE-3.6.4	Water Harvesting and Soil Conservation Structures	3(2+1)
IDE-3.6.5	Groundwater, Wells and Pumps	3(2+1)
FMPE-3.6.6	Tractor and Farm Machinery Operation and Maintenance	2(0+2)
PFE-3.6.7	Dairy and Food Engineering	3(2+1)
REE-3.6.8	Bio-energy Systems: Design and Applications	3(2+1)
Total		22(12+10)
VII Semester		
VII Semester Student READY (Rural and Entrepreneurship Awareness Development Yojana)		
CAE-4.7.1	10- weeks Industrial Attachment /Internship (Student READY)	10(0+10)
CAE-4.7.2	10- weeks Experiential Learning On campus (Student READY)	10(0+10)
CAE-4.7.3	Skill Development Training-II (Student READY) Registration only	5(0+5)
CAE-4.7.4	Educational Tour (Registration only)	2 (0+2)
Total		27(0+27)
VIII Semester		
VIII Semester Student READY (Rural and Entrepreneurship Awareness Development Yojana)		
	Elective course	3(2+1)
	Elective course	3(2+1)
	Elective course	3(2+1)
CAE-4.8.4	Project Planning and Report Writing (Student READY)	10(0+10)
Total		19(6+13)
Grand Total I to VIII semesters		182 (85+97)

Course No.	Title of the Course	Credit Hour
Elective Courses (Any 3 courses) 9 (6+3)		
SWCE-4.8.1	Floods and Control Measures	3(2+1)
SWCE-4.8.2	Wasteland Development	3(2+1)
SWCE-4.8.3	Information Technology for Land and Water Management	3(2+1)
SWCE-4.8.4	Remote Sensing and GIS Applications	3(2+1)
IDE-4.8.5	Management of Canal Irrigation System	3(2+1)
IDE-4.8.6	Minor Irrigation and Command Area Development	3(2+1)
IDE-4.8.7	Precision Farming Techniques for Protected Cultivation	3(2+1)
IDE-4.8.8	Water Quality and Management Measures	3(2+1)
IDE-4.8.9	Landscape Irrigation Design and Management	3(2+1)
IDE-4.8.10	Precision Agriculture & Animal Husbandry	3(1+2)
FMPE-4.8.11	Mechanics of Tillage and Traction	3(2+1)
FMPE-4.8.12	Farm Machinery Design and Production	3(2+1)
FMPE-4.8.13	Human Engineering and Safety	3(2+1)
FMPE-4.8.14	Tractor Design and Testing	3(2+1)
FMPE-4.8.15	Hydraulic Drives and Controls	3(2+1)
FMPE-4.8.16	Precision Agriculture and System Management	3(2+1)
FMPE-4.8.17	Robotics in Agricultural Engineering	3(2+1)
PFE-4.8.17	Food Quality and Control	3(2+1)
PFE-4.8.18	Food Plant Design and Management	3(2+1)
PFE-4.8.19	Food Packaging Technology	3(2+1)
PFE-4.8.20	Development of Processed Products	3(2+1)
PFE-4.8.21	Process Equipment Design	3(2+1)
REE-4.8.10	Plastic Applications in Agriculture	3(2+1)
REE-4.8.22	Photovoltaic Technology and Systems	3(2+1)
REE-4.8.23	Waste and By-products Utilization	3(2+1)
REE-4.8.26	Energy Conservation and Audit in Agricultural Industry	3(2+1)
CSE-4.8.24	Artificial Intelligence	3(3+0)
CSE-4.8.25	Artificial Intelligence in Agriculture	3(1+2)
ME-4.8.25	Mechatronics	3(2+1)



VISION

The college of Agricultural Engineering and Technology will be one of the nation's finest colleges and lead others in coordinating the teaching, research and extension education

in the field of Agricultural Engineering. The academic quality, continuous efforts for excellence and our responsiveness to the need of farmers and industry would be our distinction.



OUR MISSION

- + To promote students learning in Agricultural Engineering & Technology to discover and improve new technology for stake holders.
- + To provide the required manpower in the field of agricultural engineering suitable for research to state, nation and globally education, extension, government agency, private industries, agro-industries, NGO etc.
- + To be centre of excellence in teaching, research and extension in the discipline of Agricultural Engineering and

Technology.

- + To assist farmers in reduction in cost of cultivation through better utilization of efficient machinery, soil and water conservation, irrigation water management, value addition through farm level processing, post-harvest technology; protective cultivation and use of renewable energy ultimately help the farmers to increase their income.



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