Self-Study Report

College of Agricultural Engineering and Post Harvest Technology,Ranipool, Gangtok, Sikkim (Central AgriculturalUniversity, Imphal)

Submitted to:

National Agricultural Education Accreditation Board

CONTENT

6.5 Self-Study Report for the College

The College of Agricultural Engineering and Post Harvest Technology (CAEPHT) was established on 20th May, 2006 as one of the constituent colleges of Central Agricultural University, Imphal, Manipur. Itis situated at Ranipool, Gangtok on National Highway 10 connecting Siliguri in West Bengal to Gangtok, the capital of Sikkim State. The campus of college is spread over an area of 7.71 ha. The total campus is located in mostly hilly terrain and sloppy and valley land at an altitude of approximately 914.4 m. (3000 ft.) above the mean sea level. Two rivers, namely *Rani-Khola* and *Basuk-Khola*, touch the college boundary towards the east side while the national highway NH- 10 is towards the west side of college campus. The college building, situated in the terraces and valleys and surrounded by rivers, provide an ideal atmosphere for academic and research activities.

The CAEPHT, Ranipool, Gangtok, Sikkim imparts education in different branches of Agricultural Engineering. The College started its first academic programme *i.e.*, 4 year B. Tech. (Agricultural Engineering) programme from academic session 2006-07 with intake capacity of 20 students. B. Tech. (Food Technology) programme from academic session 2010-11 with intake capacity of 19 students

The course curriculum and syllabi of both the degree programme are based on the model academic regulations and syllabi as proposed by the 5th Dean Committee of Indian Council of Agricultural Research (ICAR), New Delhi. While designing curriculum, outmost care has been taken to consider the global development in Science & Technology to equip graduates to meet new challenges thrown open as a result of economic globalization and climate changes and preparing farmers for emerging opportunities at national and international level.

At present 10+2+4 pattern which comprises Student READY programme (in summer break after semester IV: Skill Development training-I for 05 weeks; in summer break after semester VI Skill Development training-I for 05 weeks; in semester VII: Industrial attachment of 10 weeks, on campus Experience Learning for 10 weeks; in semester VIII: Project planning and Report Writing) is offered from the academic year 2016-17.

College started offering M.Tech.(FMPE) programme from 2013 in the department of FMPE with an intake capacity of 3 students. In 2015-2016 the M Tech programme has been introduced in two more discipline in the departments of Soil and Water Engineering and Food Engineering. In the year 2017-18 the nomenclature of both the programmes has been changed to M.Tech. Soil and Water Conservation Engineering and M.Tech. Process and Food Engineering.

In the year 2016-17 the department of FMPE started PhD programme with an intake capacity of 2 followed by the department of PFE and SWCE with intake capacity

of 1 in each department in the year 2017-18.

Satellite Imagery CAEPHT Campus (total area = 76,893 m^2 = 7.7 ha)

Mandate of the Institution

The College of Agricultural Engg.& PHT, Ranipool Gangtok Sikkim is an unique campus under the Central Agricultural University, Imphal with complete integration of all the three functions *viz.;* teaching, research and extension. The college has the mandate to develop, strengthen and promote the understanding, knowledge and skills to improve profitability and utilization in the field of agricultural engineering, not only in Sikkim but also in the entire North-Eastern Region. The college shall also endeavor to establish linkages with other scientific institutions of ICAR, other zonal and national bodies in the field of its domain located in the region and outside the region. The mission and major objectives of the college are:

Mission

To train technical manpower, pursue high quality and high impact research, design and development of sustainable technologies/equipment related to agricultural engineering and disseminate the developed technology to the farmers' field/ agro-industries of NEH region of India.

Objectives:

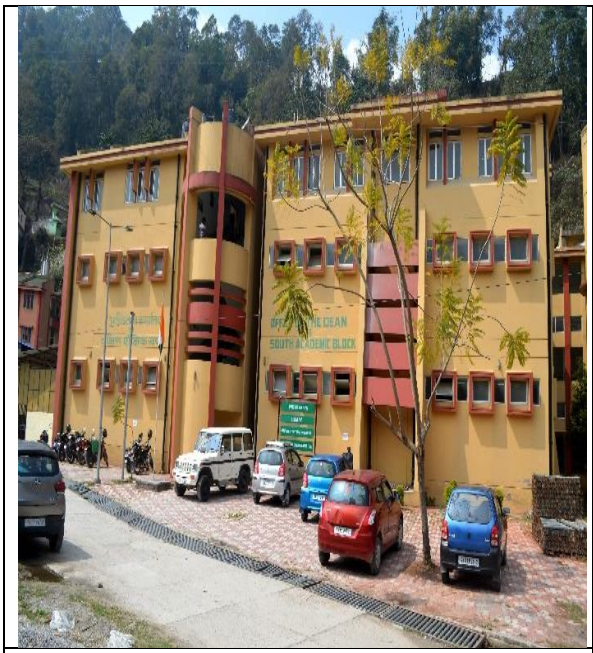
1. To establish and develop excellent academic facilities for offering undergraduate and postgraduate education in discipline of agricultural engineering and post harvest technology, appropriate to various states of NEH region in particular and country in general.
2. To impart quality education so as to produce globally competitive graduates and post graduates in areas of agricultural engineering and post

harvest technology including inter disciplinary area so that confident and capable human resource, suitable for working as scientists, academics, managers, entrepreneurs etc., could be developed.

3. To establish specialized research laboratories fitted with state of art machineries equipment and instruments for taking up basic and applied research by the scientists/teachers and post-graduate students and experiential learning facilities including pilot plants for õhands ï on trainingô of undergraduates students.
4. To develop and demonstrate modern and mechanized farming system appropriate to NEH states which may help the farmers to improves their productivity and profitability while preserving and improving the environment.
5. To develop need based improved agro-technologies and equipment for NEH region for household and on farm operations, post harvest management and utilization of renewable sources of energy.

6.5.1 College Administration

The overall administration of the academic, research, extension and other activities of the college including infrastructure development is monitored by the Dean, College of Agricultural Engineering and Post-Harvest technology, Ranipool. The Academic and Administrative building of College is depicted in **Fig. 1**. The Dean is assisted by various teaching, non- teaching and non-technical members of the institution.

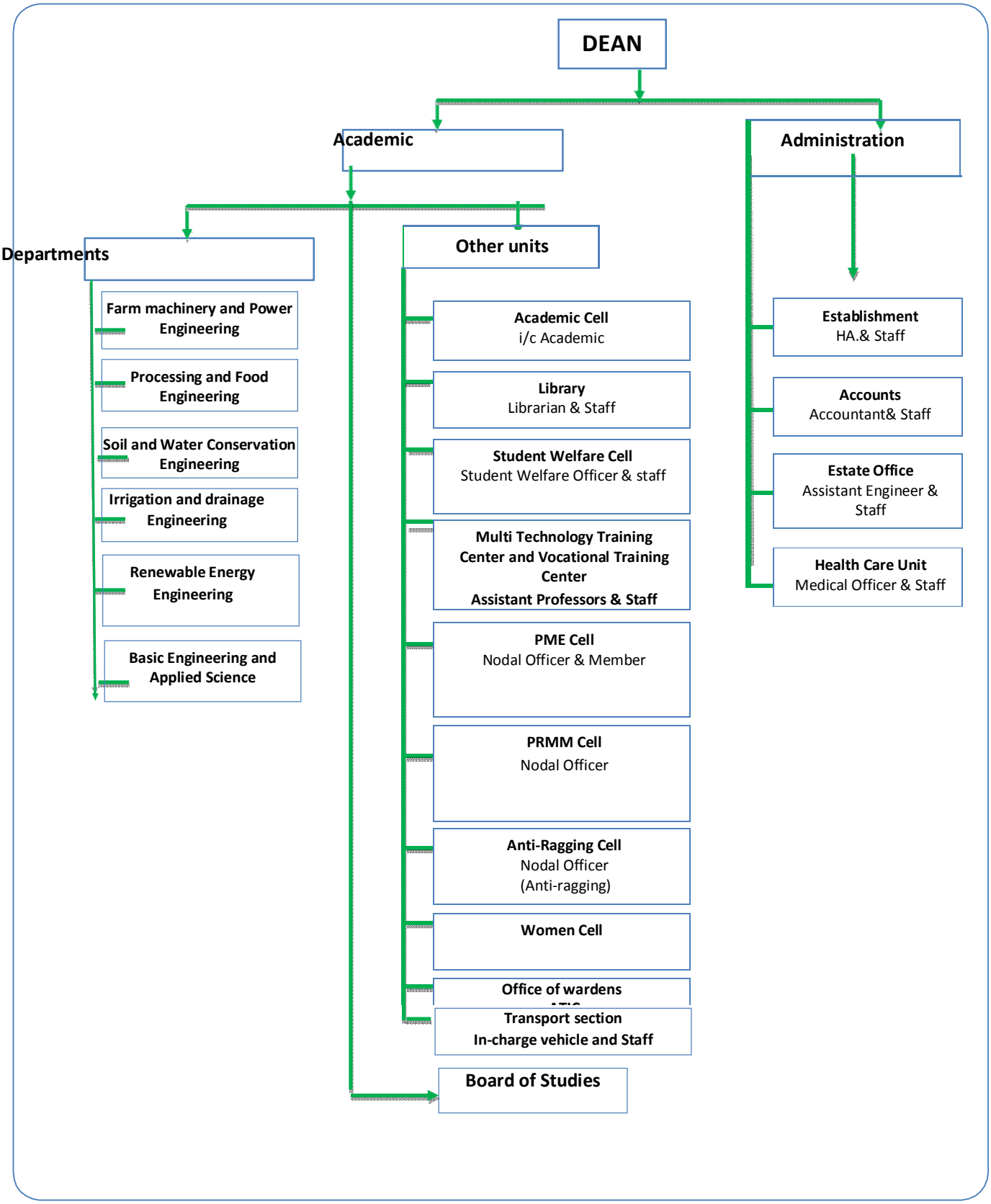


Office of the Dean & South Academic Block

Tutorial Block South

	
North Academic Block	**Tutorial Block North**

Organizational Chart of the College



6.5.1.1 College Dean's Office Establishment:

Sl. No.	Particulars	Response
1.	Whether Deanôs post has been sanctioned by the appropriate authority as per ICAR Model Act/UGC guidelines	Yes
2.	Date of selection/joining of present Dean	28/12/2017
3.	Mode of selection	Through Interview
4.	Tenure	5 Years
5.	Total number of staff in Deanôs office	One PA, One MTS for performing the official works.
6.	Infrastructure facilities (Details on infra and networking facilities available)	• Computers with printers are available at the Deanôs office with internet and UPS connectivity • Copier facility is available with Wi-Fi connectivity

6.5.1.2. Monitoring Mechanism for Quality Education (on-line):

Teaching

At the beginning of every semester course registration is done immediately after getting admission. The conduct of theory and practical classes are reviewed by the Head of the Departments, Academic In-charge and the Dean, College of Agricultural Engineering and Post Harvest Technology, Ranipool.

Undergraduate, Master's and Doctoral degree programme

- Mid semester, practical and final theory examination are conducted to assess the students Assignments are regularly given to students in each of the courses related to the curriculum
- Externalsystemofevaluationfollowedforboththeoryandpracticalforeachcourserelated to the curriculum
- Academic counselling is done every week by assigned student advisors
- Monthly quiz programmes and group discussions are arranged for the students to ascertain their proficiencies and knowledge

- Students who are academically weak are given special guidance and extra lectures are conducted for improvement
- Masterôs and Doctoral students are assigned to Advisory Committee under Chairperson from respective departments for conduction of courses, research activities, seminars. The progress of all activities is measured every semester through Progress seminar.

Faculty Research

- The faculty are involved in research activities related to crop production, crop protection and plant improvement
- The PME cell appraises the research proposals at college levels
- The progress of the research is regularly monitored by the PME cell
- Review of progress of research work are evaluated by the Dean, Director of Research and the Vice Chancellor, CAU during Research Review Committee meetings
- Submission of annual report for on going projects

Presently, the faculties of College of Agricultural engineering and PHT, Ranipool are conducting research activities on following prior thrust researchable issues.

Sl. No.	Research Thrust Area	Prioritized Researchable Issues for 2020-21
1.	Mechanization of hill agriculture for increased production and productivity with reduced drudgery	(i) Design and Development of electrostatic sprayer for organic bio-pesticide (ii) Development of zero-till planter matching to mini tractor for small farm mechanization (iii) Development of Ergonomically Designed Cashew Nut Sheller (iv) Development and evaluation of a small buckwheat thresher (v) Performance evaluation of the improved axial flow paddy thresher (vi) Feasibility study of direct seeding of palleted rice seeds. (vii) Design refinements and performance evaluation of mini maize sheller (viii) Performance evaluation of mini fodder shredder (xi) Small farm mechanization in hilly areas for integrated farming with cost economics (x) Development of improved package of animal drawn equipment and technology for organic farming in small farms with rice and rice based cropping systems (xi) Prototype production and FLD of proven animal drawn equipment and technology for adoption by farmers and creation/strengthening of TRC in rural eco-system
2.	In-situ soil and water	(i) Location specific soil erosion and soil aggregate

	management including water harvesting and protected cultivation	stability studies (ii) Use of GIS and geo-statistics for soil erosion and soil properties modelling (iii) Changes in rainfall, temperature, and other climatic parameters in northeast India (iv) Drought Analysis over Northeast India (v) Design and development of Fog harvesting mechanism for Water management (vi) Irrigation management through natural sources, like, Springs and water quality issues (vii) Integration of rain water harvesting system with micro irrigation (viii) Study of Physico-chemical and microbiological water quality parameters of Sikkim
3.	Postharvest management, processing and value addition of crops produced in NEH region (secondary agriculture)	(i) Processing and value addition of squash (ii) Processing of large cardamom (iii) Development of equipment for osmotic dehydration of local fruits and vegetables suitable for production of value added products (iv) Design and development of primary processing equipment for Cherry Pepper and Squash (v) Processing and value addition of Pomelo juice (vi) Processing and value addition of Sho-shang (vii) Processing and value addition of yak milk (viii) Fortified food from underutilized cereals, pulses and millets. (ix) Development of aquaculture feeds from locally available food materials
4.	Enhanced utilization of renewable energy sources	(i) Development of solar photovoltaic water pumping system for irrigation in NEH region (ii) Performance analysis of solar photovoltaic module with changing solar insolation, temperature and tilt angle on the basis of indoor and outdoor conditions in Ranipool, Gangtok, Sikkim (iii)Thermal performance and embodied energy analysis of biomass cook stoves
5.	Agri-business management	(i) Market segment analysis for successful agribusiness in organic farming (ii) To study viable approaches for marketing of organically produced foods and its marketing management
6.	Organic farming and integrated farming	(i) Livestock based organic farming system - a better option for livelihood option and for entrepreneurship development (ii) Nutritional profiling and identification of bioactive principles of certain indigenous herbal vegetables for the promotion of health and nutritional security

Extension

The faculty of College of Agricultural Engineering and Post-Harvest Technology has organized number of extension activities. These activities are monitored by the Dean and

University Officers regularly and annually by obtaining reports.

Activity	2017-18	2018-19	1019-20
Demonstration of new Technology a) On campus b) Off Campus	a)09(469)	a) Nil b)19(1331)	a)65(818)
Informal Education of Farmers(3-5 days) a) On campus b) Off Campus	a)07(218) b)11(535)	a) 02(35) b) 02(182)	a)01(28) b)04(78)
Awareness programme		07(457)	18(438)
Informal Education to line Department a) On campus	a)03(99)	a) Nil	b) Nil
Vocational Training(Skill Development)	-	06(149) 3no.-90 days 1 no.-40 days 1 no. -25 days 1 no.-06 days	Nil
MGMG Activity	-	30(530)	12(288)
Other Sponsored Programme a) ATARI b) ICAR	a) Nil b) Nil	a)02(50) b)03(83)	a) Nil b) Nil
Agri Fare organized (Technology Demonstration Mela)	01(362)	01(300)	01(250)
Participation in Agri Fare	03(452)	-	02(700)
M ANAGE	-	01(97 students)	Nil
CCS- NIAM(Jaipur)	-	-	02(65)
Success Story documented	02 (REE Department)	01 (Farmer-Adoption of Farm Mechanization)	04 (Farmers)

Figure in parenthesis indicates number of farmers

Measures taken to improve the quality of education, research and extension Education

- Industrial and institute related exposure visits related to the courses offered to thestudents
- Recognition and awards are given to best students at university level
- Educational talk are arrange inviting experts from different fields
- Assignments and exams are conducted on regular basis

Research

- Encouraging students to actively participate in workshops, webinars and conferences
- Experimental learning programme of six different modules is conducted for 12 weeks and 10 weeks in plant training for skill generation
- Students undergo Research Work in B. Tech, M. Tech and Ph.D.

Extension

- Organizing more farmer trainings and group discussion programmes
- Conducting brain storming sessions for group approach
- Involvement of students in extension activities

Impact of monitoring with reference to students' excelling in academics, research and extracurricular activities

Academics

CAEPHT Ranipool, since its inception has contributed significantly for the development of quality human resource which can be evidenced in the form of number of graduate, postgraduate and doctoral students, JRFôs, SRF awardees, students employing state government, SAUôs, central institutes, banking sector, private firms, MNCôs and entrepreneurs. Placement cell of the college is facilitating carrier guidance and personality development programmes that aim at increasing employability of the students. Faculty are also encouraging students to appear for various competitive exams like ASRB, PSC, UPSC, IBPS, GATE, GRE, TOFFEL and CAT.

Year	**No. of Student**	**Student undergo higher studies**		**Employment status**			
		State University/ National Institute	International Institute	State Department	Banking/Private Company/ University	UPSC	Central Govt/ARS/Asst. Professors.
2010	16 (AE)	04 (AE)	02 (AE)	08			01
2011	18 (AE)	03 (AE)		09			04 (ARS) 01 (Asst. Prof.)
2012	24 (AE)	07 (AE)	1 (AE)	04	07		02 (ARS) 01 (Asst. Prof.)
2013	26 (AE)	08 (AE)	-	08	05		
2014	31 (AE) 11(FT)	08 (AE) 06 (FT)		04	10		
2015	17 (AE) 05(FT)	01 (AE) 02 (FT)		06	01		
2016	29 (AE) 07(FT)	07 (AE)		03	01		
2017	26 (AE) 09(FT)	12 (AE) 05 (FT)		-			
2018	22 (AE) 06(FT)	13 (AE) 01 (FT)		-			
2019	26 (AE) 10 (FT)	18 (AE) 02 (FT)	01 (AE)	-			
2020	37 (AE) 05(FT)	24 (AE) 03 (FT)		-			01 (AE)

Research

Research activities of this college have significantly contributed in thedevelopment of agricultural engineering and allied fields. The faculties are running various externally funded projects e.g. DST, ICAR-AICRP and CRP, RKVY and internally funded projects i.e. Intramural Research Projects by CAU, Imphal. These research activities benefit students with carrying research and development of various machines and equipments. The demo models and pilot scale models are useful for further fully developed equipments. So research activities carried out in UG, PG and Ph.D. are benefitting students to gain knowledge and set of skills. The research enhancement its positive impact can be observed from surge in Publication of research results in peer reviewed journals by faculty members, students and research fellows.

Technologies designed and developed during five years (2010 to 2015)

S. N.	Title of the Technology
1.	Standardized blended RTS beverages using passion fruit, orange and ginger(2010)
2.	Standardized packing technology for orchid cut flower to increase the shelf life upto 21 days for long distance marketing (Student research project ,2011)
3.	Standardized technology for value added products of pineapple viz., juices (RTS) and osmo-dehydrated rings(2011)
4.	Standardized essential oil extraction from Lemongrass and *Java citronella(*NAIP Project,2011)
5.	Animal drawn single row zero till drill (AICRP ON UAE, 2011)
6.	Animal drawn wing plough (Modified at CAEPHT, 2011)
7.	Improved large cardamom harvesting knife(2011)
8.	Portable Side Feed Smokeless Cook Stove(ERP,2012)
9.	Low-cost gravity based ropeway for transportation of agricultural produce and inputs to and from remote location (AICRP-ESA, 2012)
10.	Animal drawn multi purpose tool frame with attachment (AICRP-UAE,2013)
11.	Two raw manual rice transplanter (2013)
12.	ergy Efficient Double Pot Improved Biomass Cook Stove (ERP, 2013)
13.	Animal drawn single row improved Potato Digger(AICRP, 2014)
14.	Animal drawn peg planker (AICRP-UAE, 2014)
15.	Animal drawn clod crusher cum leveler cum planker (2015)
16.	Power tiller operated multi-crop seed drill cum planter(AICRP on FIM, 2015)
17.	Animal drawnsingle row zero till planter(AICRP-UAE, 2015)
18.	Animal drawnmulti crop two row zero-till-planter (AICRP-UAE, 2015)
19.	Adjustable saddle for transportation of pack load by yak (AICRP-UAE, 2015)
20.	Mixed Mode Photovoltaic Powered Forced Convection Solar Dryer(IRP,2015)

Technologies designed and developed during five years (2016 to 2020)

S. N.	Title of the Technology
1.	Power operated hold-on type paddy thresher (AICRP on FIM,2016)
2.	Development of filtration units for natural streams for reducing the sediment load

	in natural ponds/ tanks (2016)
3.	Portable manual mulch laying machine for hill terrace (AICRP-PET, 2016)
4.	Improved harnessing system of domesticated Mithun for utilization in agriculture (YOKE) (AICRP-UAE, 2016)
5.	Self-propelled crop residue mulcher cum weeder (2017)
6.	Light weight self-propelled zero till multi-crop planter((2017)
7.	Light weight self-propelled zero till multi-crop planter(ERP, 2017)
8.	Roof water harvesting system of a bamboo polyhouse(2019)
9.	Gravity fed micro irrigation system (MIS) for terraced topography of hilly terrain(ERP, 2020)

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 033112547
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	345919
आवेदन सं. / Application No.	:	201831045241
फाइल करने की तारीख / Date of Filing	:	30/11/2018
पेटेंटी / Patentee	:	1.Ajay Kumar Vashisht 2.Prem Ranjan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित MULTI-COLUMN SAND FILTER AND A METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 30th day of November 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled MULTI-COLUMN SAND FILTER AND A METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 30th day of November 2018 in accordance with the provisions of the Patents Act,1970.

Dr A. K. Vasishtand Er. Prem Ranjan got Patent for an invention "Multi Column Filter and a method thereof" (Patent Number 345919, date of filling 30-11-2018)

Extracurricular

Participation in sports and cultural events at state and nationallevels has increased and students are making impact through more participation and wining prizes.

Sl. No.	Events (sports, literary, cultural meets)	state/regional /national level	Year	Position
1	Inter-collegiate Youth Festival of Central Agricultural University, Imphal held at College of Fisheries, Agartala,	Regional	5/11/2015 to 7/11/2015.	Nil

	Tripura			
2	One student of College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok took part with Central Agricultural University, Imphal team in the AGRIUNIFEST, 2015-16 held at OUAT, Bhubaneswar, Odisha from	**National**	1st to 4th Feb, 2016.	**Nil**
3	Inter-collegiate Sports Meet, 2015-16 held at College of Horticulture and Forestry, Pashighat, Arunachal Pradesh. College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok.	**Regional**	24th March, 2016 to 30th March, 2016	2nd
4	Students of College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok participated with the Central Agricultural University, Imphal team in All India Inter University Athletics (Men & Women) Championship 2015-16 held in org. by: Director of Sports, Punjabi University, Patiala.	**National**	Dec, 2015-January, 2016,	**Nil**
5	The students of our college was participated in the A-MAZE 2016: an inter college quiz competition 2016 held at Sikkim govt. college Sikkim.	State	22.10.2016	**Nil**
6	Intercollegiate Youth Festival Held At COHF, Pashighat.		24-26thnov 2016	Participation In 3rd Intercollegiate Youth Festival Held At COHF, Pashighat
7	The students of our college was participated in the football fest 2017 held at SMIT.	Students Of CAEPHT Participated In Football Fest 2017 Held At SMIT	10-12thfeb 2017	**Nil**
8	The champion team as well as selected students were took part	Participation In 4th	16-19thfeb, 2017	**Nil**

	in 4th Intercollegiate Games And Sports Meet 2017 Held At COH Tripura	Intercollegiate Games And Sports Meet 2017 Held At COH Tripura		
9	One student of CAEPHT, Ranipooltook part with CAU team in the AGRIUNIFEST, 2017 held at bikaneer, Rajasthan.	AGRIUNIFEST	22-25thfeb 2017	Nil
10	District Level Youth Parliament competition at Nar Bahadur Bhandari degree college, tadong, Sikkim..	District level	2018	Mr. Aman Berma got selected in the state level youth parliament competition
11	IGNITE-Light the fire within, is sikkimôs only intercollege competition held at CAEPHT, auditorium which was organized by Inner wheel club of Gangtok	State	2018	Mr. Mayanglambam Aarbindro was received the first prize in sketching competition.
12	Eight students of CAEPHT, Ranipool were participated in the trial selection of games and sports held at COA, Imphal.	Regional	2018	04 students from CAEPHT were selected for participation in 19th all India inter agricultural universities sports games and sports meet 2018 -19 held at PAU, Ludhiana from 2nd -5th January 2019.
13	25 students of College of Agricultural Engineering and Post-Harvest Technology participated in 5th CAU Inter-Collegiate Youth Festival 2018 held at College of Veterinary Sciences and Animal Husbandry, CAU, Mizoram.	Regional	2018	Mr. Shivam Kumar Singh stood 1st position in Elocution and Mr. Bharat Singh stood 1st position in Mono acting and the college received 5th position in overall competition.

14	04 students from CAEPHT were participated in 19th all India inter agricultural universities sports games and sports meet 2018 -19 held at PAU, Ludhiana from 2nd -5th January 2019.	National	2018	Nil
15	02 students from CAEPHT were participated in 19th all India inter Agricultural Universities Youth Festival 2018 -19 held at Datiwada Agricultural University, Sardarkrushinagar (Gujarat) from 3rd -7th February 2019.	National	2019	Nil
16	Poster making competition of national productivity week 2019 were organized under the theme of ñCircular Economy for Productivity & Sustainabilityò at CAEPHT. The selected three best poster from CAEPHT were sent to National Productivity Council, Kolkata for participating in poster making competition.	National	2019	Miss. Tamoha Sur, B.Tech., FT, 2nd year of CAEPHT received the 1st prize in poster making competition.
17	Intercollege Basketball tournament held at Paljor stadium which was organized by Sikkim Govt. College Burtuk from 18th April 2019.	State	2019	Nil
18	11 students were participated on IGNITE-Light the fire within, is Sikkimôs only intercollege competition at CAEPHT, auditorium which was organized by Inner wheel club of Gangtok..	State	2019	Mr. Kundan Pandey and Mr. Aman Berma was received the first prize in Quiz competition
19	27 students of participated in 6th CAU Inter-Collegiate Youth Festival cum Games and Sports Meet 2019 held at College of Agriculture, CAU, Imphal, during 18th to 21st Nov., 2019.	Regional	2019	Mr. Sachin Yadav stood 1st position in Shot Put Throw event and Mr. Rajkumar Birendrakumar stood 1st Runner up in Badminton and

				the college received 6thPosition in overall competition.

Additional information on monitoring mechanism for quality education

- Monthly meetings: The Dean CAEPHT conducts monthly meetings with the faculties to evaluate the progress in the field of teaching, research and extension.
- Annual reports: Annual reports are prepared for the college based on teaching, research and extension education activities performed during the year in consideration. The reports are used for measuring the performances of the college during the particular year and serve as guidelines for future action plan

Student evaluation:

Students advisory meeting is conducted every week by respective advisors and every month Students Advisory meeting is held along with the Dean of the college.Herecei vesthefeedbackfromthestudentsandgivesdirectiontothefaculties.The students are providing the feedback of course teachers who handle the classes during a particular semester in a prescribed proforma. The feedback of the students is analyzed and the inadequacies are properly addressed

6.5.1.3 CC/Board of Studies:

The College of Agricultural Engineering and Post Harvest Technology, Ranipool is a constituent college of Central Agricultural University, Imphal and is governed by decisions of the statutory bodies *viz.,* Board of Studies (BOS) and Academic Council. The following major recommendations have been made during the period of report:

Composition of the BOS	**Date of conduct of meetings for last five Years**	**Major recommendations made by the BOS**
• 01Chairperson (DEAN, CAEPHT) • 01Co-chairperson (DEAN, COFT,	3rd BOS Meeting February 13, 2015	Staring PhD programme in Farm Machinery and Power Engineering.

Imphal) • All HODôs of CAEPHT Ranipool • Director of Instruction, Extension Education and Researchôs member • Academic in-charge of CAEPHT, Ranipool and COFT, Imphal • One representative of Academic Council nominated by Vice Chancellor • Two eminent scientists from Agricultural education system not belonging to CAU, Imphal.	4th BOS Meeting 20th July 2016	Starting of Ph.D. programme in Soil and water conservation Engineering and Processing and Food engineering disciplines. Change of Name of Department from Farm Power and Machinery Department to Farm machinery and Power Engineering Proposal of exchange of two courses of B. Tech Agril. Engg. From 1st sem to 2nd sem
	5th BOS Meeting 23rd May, 2017	• Approval for PG programme M. Tech in Renewable Energy and Irrigation Drainage Engineering with Intake capacity of 3 (2 CAU+ 1 ICAR). • Correction in title of Course Communication Skills and Personality Development of B. Tech food technology as per V Dean Committee. • Modification of 3 subjects Theory of machines, machine Design and Tractor systems & Control offered to B. tech (Agril. Engg.) • Tutorial Class for BEAS 1207 and BEAS 2107. • Proposal to start day scholar arrangement for interested students. • Fixing of date of renamed Degrees due to change in Nomenclature
	6th BOS Meeting 26th April, 2018	• Migration of Mr. Lenjachung Serto, b. Tech (Agril. Engg.) from 4th DEAN to 5th Dean recommended curriculum.
	7th BOS Meeting 13th May,2019	• Shifting of course entitled ñWeb designing and internet applicationsò from even semester to odd. • Modification of syllabus four courses of B. Tech food Technology. • Approval of course structures of M.Tech Renewable Energy engineering and Irrigation Drainage engineering. • Interchanging the semester of the

		B. Tech course Ground water wells and Pump and Drainage Engineering from semester VI to semester V. • Common course nomenclature for courses of Food technology of CAEPHT, Ranipool and COFT, Imphal
	8th BOS Meeting 29th April, 2020 Meeting through video conferencing online using Google Meet.	Approval for internal setting of question paper and evaluation for 2nd semester of Academic session 2019-2020. Combining Mid-term and end term examination for 2nd session of 2019-20 Conducting comprehensive viva-voce examination for PhD and PG students online during 2nd semester academic session 2019-20.

6.5.1.4. Anti-Ragging Committee:

The Anti- Ragging committee comprising of Dean, Wardenôs (Boyôs Hostel & Girlôs Hostel), Female Faculty members and Student Welfare Officer (SWO) is formed every year to inspect and to visit Hostels (both for Girlôs & Boyôs) at any time after the entry time. Each student is allotted withoneadvisertodiscusstheirproblemsandcounsellingisbeingdoneonweeklybasisforallthe students by their respective advisers. Meetings & Group discussion is being conducted regarding related Anti Ragging topic on quarterlybasis.

Members of Anti Ragging squad	**Date**
Dr. B.K. Singh, Dr. P. Bhumita , M. Sanju Singh	15-07-2019 to 31-8-2019
Dr. A.B. Sherpa, Dr. Dipika Sarmah, Dr. Sudip Das	
Dr. M.S. Saveda, Dr. Sujata Jena, Dr. D. Jhajaria	
Dr. S.N. Yadav, Dr. N.S. Chauhan, Mrs. L. Chanu	
Er. Rajiv Pradhan, Er. Nandita Sen, Dr. Rakesh Kr. R.	
Er. Satpathy, Er. S.K. Chauhan, Dr. Anuradha Devi	
Dr. Dhananjoy Roy, Er. S.S. Das, Dr. Diana S	
Dr. J. Panda, Dr. B.C. Khusre, Dr. P. Bhumita	
Er. S.M. Kamaruzzaman, Dr. CH. Birendrajit, Dr. Sushma Gurumayum	
Dr. S.R. Yadav, Dr. Y. Ghanasyam Singh, Ms. Esther L.	
Dr. G.T. Patle, , , Dr. A.K. Vashisht, Dr. M. Chanchan	
Dr. Said P.P., Dr. Srikant Kr. Mehr, Er. N. Devrani	
Members of Anti Ragging squad	**Date**
Dr. Said P.P, Dr. Dinganggana Talukdar, M. Sanju Singh	

Dr. N.S. Chauhan, Dr. Dipika Sarmah, Dr. D. Jhajaria	15-07-2018 to 31-8-2018
Dr. M.S. Saveda, Dr. Sujata Jena, Dr. Sudip Das	
Dr. A.B. Sherpa , Dr. S.N. Yadav, Mrs. L. Chanu	
Dr. J. Panda, Er. Nandita Sen, Er. S.M. Kamaruzzaman	
Er. Satpathy, Er. S.K. Chauhan, Dr. Anuradha Devi	
Dr. Dhananjoy Roy, Er. S.S. Das, Dr. Diana S	
Dr. A.K. Vashisht, Dr. B.C. Khusre, Dr. Dinganggana Talukdar	
Dr. Rakesh Kr. R., Dr. CH. Birendrajit, Dr. Sushma Gurumayum	
Dr. S.R. Yadav, Dr. Srikant Kr. Mehr , Dr. Dinganggana Talukdar	
Dr. G.T. Patle, Er. Rajiv Pradhan, Dr. M. Chanchan	
Dr. B.K. Singh, Er. N. Devrani, Dr. Y. Ghanasyam Singh	

6.5.1.5. Biological waste disposal facility: Yes

Chemical, Biological and recyclable wastes generated through a variety of research activities, clinical service, maintenance and cleaning operation at the college level have been disposed systematically. Field wastes are converted to compost. Food waste is used for compost pitstoprepare compost. Incineration unit has been installed in ladiesô hostel and soak pit facilities are being used. Compost and vermin-compost units are established for converting biological wastes. The laboratory chemical wastes are disposed by burying deep into the soil. Waste bins and Dust bins are maintained at regular distance.Regular cleaning and burying activities of the wastes accumulated is monitored by Swacch Bharat committee of college.

Facilities for waste disposal

6.5.1.6. Institutional Ethics Committee for Experiment on Animals:

The college is not undertaking experiments on Animals. However, if such experiments are undertaken in future, then the college will strictly adhere to CPCSEA guidelines and will constitute an Institutional Animal Ethics Committee (IAEC).

6.5.1.7. Committee for Prevention of Sexual Harassment of Women at Work Places:

The women cell for prevention of sexual harassment of women has been formed to address all grievances pertaining to sexual harassment of women (students, teaching and non-teaching staff and labours) at the college. Dr. Sujata Jena I/c Women Cell looks after the problems. There as no complaint on sexual harassment in the college during last five years. However, details on sexual harassment of women at work place Act, 2013 and a preamble of the Act and seeking remedy under this Act are clearly explained to the staff and farmworkers.

6.5.2. Faculty

As per faculty recommended by ICAR/~~UGC/VCI/~~Other regulatory bodies the faculty strength is sufficient. Special focus is paid for all round development of student to show their hidden talent in addition to their educational programme. The College organizes co-curricular and extra-curricular activities for overall development of studentôs personality and carrier. Annual College Week, Blood Donation Camp, Science Day, Awareness Programs, NSS, Physical Education, Sports, Literary activities etc are also organized to give the opportunity to the students. The students also participate regularly inter collegiate event of University and National level competitive events.

6.5.2.1. Faculty strength sanctioned, vacant and recommended by ICAR

Sl. No.	Sanction Faculty	Faculty Sanctioned	Faculty in Place	Vacant Position	Faculty recommended By ICAR/UGC/VCI/Other regulatory bodies
1.	Professor	4	2	2	**07**(# 1 professor as DEAN)
2.	Associate Professor	11	6*	5	**13**

3.	Assistant Professor	30	25	5	**24**
4.	MTTC/VTC Faculty	5	5	0	**NA**
Total		**50**	**38**	**12**	**45**
	***3 promoted as Professor under CAS**				

6.5.2.2. Faculty Profile (department wise):

The existing faculty strengths of College of Agricultural Engineering and Post-Harvest Technology and MTTC & VTC is sufficient for academic requirement of the college.

Department wise Faculty strength

Sl. No.	Department	Professor	Faculty recommended By ICAR	Associate Professor	Faculty recommended By ICAR	Assistant Professor	Faculty recommended By ICAR
1.	Farm Machinery and Power Engineering	02	01	-	2	04	3
2.	Processing and Food Engineering	01*	01	01	2	03	3
3.	Soil and Water Conservation Engineering	01	01	01	2	02	3
4.	Irrigation and Drainage Engineering	01	01	01	2	02	3
5.	Renewable Energy Engineering	01	01	-	2	03	3
6.	Basic Engineering and Applied Science	-	01	-	3	11	9
Total		06	07 (# 1 professor as DEAN)	03	13	25	24

***Contractual**

Faculty strength of Multi Technology Testing Center and Vocational Training Centre (MTTC &VTC)

Sl. No.	Department	Professor	Associate Professor	Assistant Professor
1.	Agronomy	-	-	01
2.	Plant Protection	-	-	01
3.	Horticulture	-	-	01
4.	Plant Breeding Genetics	-	-	01
5.	Extension Education	-	-	01
Total		-	-	05

6.5.2.4. Credentials of the Faculty:

All faculty members of the college are qualified and recognized persons of their fields. The college has adequate proportion of experienced and young faculty members. Many faculty members in the college have received awards for their excellence in teaching and research activities. The details of qualification, experience and

professional licensure and certification and demonstrated competencies are detailed in Annexure **6.5.2.3.**

6.5.2.4. Technical and Supporting Staff:

The technical staff and other supporting staff of College of Agricultural Engineering and Post Harvest Technology are attached with the Deanôs office for administrative, convenience and being allotted to other departments for as per requirements and skills imparted. Other than these staffs some Skilled and Unskilled labours are hired on contractual basis. The administrative and accounts staff are centralized in the college and are operating under the direct control of the Dean as part of Deanôs office.

Strength of Technical & Supporting Staff: Available posts and actual filled

Sl. No.	Name of the Post	No. of Post	Actual Filled	Vacancy
A.	**Dean office**			
1.	Sr. Stenographer	01	00	01
2.	Computer Operator	01	01	00
3.	MTS	01	01	00
B.	**Establishment**			
1.	Asstt. Registrar(Estt.)	01	00	01
2.	Head Assistant	01	01	00
3.	Assistant	01	01	00
4.	UDC	01	00	01
5.	MTS	01	01	00
C.	**Store and Purchase**			
1.	UDC	02	01	01
2.	MTS	01	01	00
D.	**Account Section**			
1.	Assistant Comptroller	01	00	01
2.	Accountant	02	01	01
3.	Account Assistant/ Cashier	02	02	00
4.	UDC	01	01	00
5.	LDC	01	01	00
5.	MTS	01	01	00
F.	**Academic Section**			
1.	Assistant Registrar (Acsad)	01	00	01
2.	UDC	02	01	01
3.	MTS	01	01	00

G.	**Engineering Section/ Estate section**			
1.	Assistant Engineer(Civil)/ Assistant estate officer- Civil	01	01	00
2.	Junior Engineer- Civil	01	01	00
3.	Junior Engineer- Electrical	01	00	01
4.	UDC	01	01	00
5.	Electrician	01	01	00
6.	Carpenter	01	01	00
7.	Plumber	01	01	00
8.	MTS	01	01	00
H.	**Transport Section**			
1.	Driver	05	04	01
2.	Handyman(MTS)	02	02	00
I.	**Library Staff**			
1.	Librarian	01	00	01
2.	Sr. Library Assistant	01	01	00
3.	Library Asstt.	01	01	00
4.	MTS	03	03	00
J.	**Students Welfare**			
1.	Student Welfare Officer	01	**00**	**01**
K.	**Hostel Staff**			
1.	Cook (MTS)	03	03	00
L.	**Technical Staff**			
1.	Field-cum-Lab assistant	17	11	06
2.	Horticulture Assistant	01	01	00
3.	Livestock Assistant /Farm Assistant	05	04	01
M.	**Medical Unit**			
1.	Medical Officer	01	01	00
2.	Compounder	01	01	00
3.	Female Health Worker	02	02	00
4.	Male Health Worker	01	01	00
N.	**Security**			
1.	Security Guard	02	02	00
2.	Chawkidar(MTS)	02	02	00
O.	**MTTC/VTC**			
1.	Account Assistants	02	02	00

	ATTIC			
1.	MTS	01	01	00
	Guest House			
1.	MTS	01	01	00
	FMPE			
	UDC	01	01	00
P.	**MTS(Multi-tasking staff) in various departments**	22	22	00
	Total	**107**	**88**	

6.5.3. Learning resources:

Learning resources like books, photos, life specimen and audio-visual aids like power-point presentation, videos are used to assist the students to meet the expectation for learning defined by ICAR recommended curriculum.

Faculties are provided with computers to access the online open coursework and online portal to use it for the curriculum delivery. Faculty members access various resources for use in teaching, research and extension activities. Students are also encouraged to access various software applications in agriculture.

6.5.3.1. College Library (digital):

The Library provides circulation and reference services. All the in-house operations of the Library are fully computerized using the networked version of the Library software KOHA with Web OPAC facilities. The Library also has access to online e-journals through CeRA. Photocopying and printing facility is also available in the Library. Details of library are as given below:Area of Library: 2400 sq. ft. (223 sq. m.)

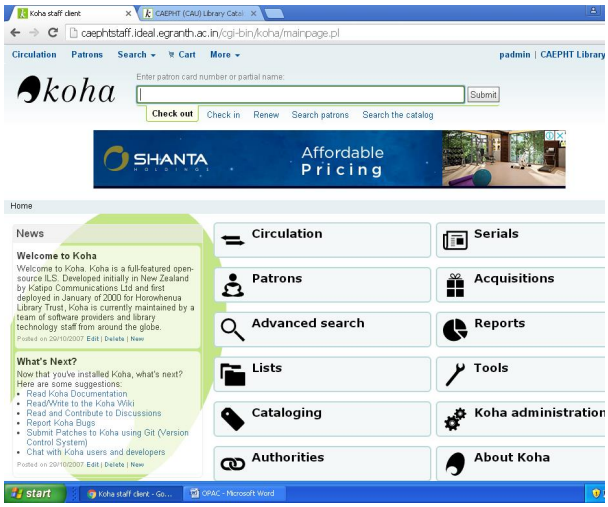
Table. 20 Details of Library

Sl No.	**Particulars**	**Details**
1.	Present staff	1 Senior Library Assistants 1 Library Assistants 3 Multi-tasking Staffs
2.	Availability of Wi-fi	Wi-fi facilities area available in the library with a band width speed of 1GBps from NIC-NKN network.
3.	Books	For College of Agricultural Engineering and Post-Harvest Technology: **7831 books**
4.	Other reading materials	National and local newspaper such as Dainik Jagran (Hindi), The Telegraph, The Times of India, Sikkim Express (English), Hamro Prajashakti (Nepali)etc. Magazines like India Today, Down To Earth, Pratiyogita

		Darpan, Civil Services Chronicle, Kurukshetra, Yojana, Agriculture Today, Economics and Political weekly.
5.	Research Journals	Students and faculty can access journals through online portal of CeRA, ICAR.
6.	Internet with computers	Two
7.	Sitting capacity	28numbers
8.	Latest technology in library	KOHA LMS is being used for Library Automation in CAEPHT Library. Necessary steps have been initiated for accessing online journals and study materials at Electronic Resource Management package for e-journals access through CeRA (Consortia fore-Resources in Agriculture)
9.	Stocking arrangement	rary adopted Open Access System for accessing library collection and classified according to Dewey Decimal Classification (DDC) scheme (22 Ed.) and arranged in APUPA pattern, stacked in different parts like, Subject books Kannada/Literature books General books Reference books Competitive Exam books Thesis Back volumes Seminar scripts
10.	Operating hours	10.00 AM to 05.00PM
11.	Books available in COH	Horticulture, Crop Physiology, Plant Biotechnology Genetics and Plant Breeding, Entomology, Microbiology, Agronomy, Plant Pathology, Crop Physiology, Soil Science & Ag. Chemistry, Agro forestry, Ecology, Text book of Advanced Pomology, Plant Biotechnology, Plant Biochemistry, Ag. Economics, Ag. Extension, Statistics, Computer Application & IPR, Botany, Floriculture, Pest management in vegetables, Handbook of Beekeeping.

Library at College of Agricultural Engineering & Post-Harvest Technology

Website Page of CAEPHT Library portal for quick access



Maintenance of library books, circulation, documentation, nomenclature and serials using KOHA

6.5.3.2. Laboratories, Instructional farm, Workshops, Dairy Plant, Veterinary Clinic, Hatchery, Ponds etc.:

The College of Agricultural Engineering and PHT, Ranipool is having laboratories of all departments are well equipped with all the necessary equipment and facilities to accomplish the academic activities. All basic chemicals and instruments are available for doing practical and research work in all the laboratories. The farm facilities, workshops and other instructional units are well designed to meet the course curricular and research requirements.

Farm facilities

Farm facilities, workshops and other instructional units

Sl. No.	Name of the Department	Farm Area (ha)	Irrigated / No irrigated (ha)	Crops grown
1	Irrigation and Drainage Engineering	0.07	Irrigated	Cauliflower, Broccoli, Coriander,
2	Soil and Water Conservation Engineering (under AICRP On PET)	0.01 (under 4 green houses)	Irrigated	Cauliflower, Broccoli, Tomato, Onion, Garlic, Capsicum,
3	Renewable Energy Engineering	0.004	Irrigated	Tomato
4	Farm section	0.004	Irrigated	Flowers

Poly house and Shade nets

Poly house and Shade nets available area wise and crop details

Sl. No.	particulars	Total available numbers	Area (m^2)	Crops grown

1	Polyhouse	07 (4 in AICRP PET, 1 in IDE, 1 in REE,1 under Farm section)	30 sq. m. to 120 sq. m	vegetable crops
2	Shadenet	02 under AICRP PET	10 sq. m.	Seedlings

Facilities available in farm section:

available Facilities to farm section

Sl. No.	Facility	Remarks
1	10hp motor	For supply and water pumping
2	Drip irrigation systems	For irrigation of land and polyhouses
3	Solar water pumping system with farm pond source	For supply and water pumping from farm pond and tanks
4	Water supply tanks	Water storage and supply

Diary Plant, water storage ponds, Farm equipment and Meteorological units:

List of available facilities under Diary Plant, water storage ponds, Farm equipment and Meteorological units

Sl. No.	Particulars	Details	Remarks/ Area
1	Dairy Plant		
2	Vermicomposting	1 No.	For production of organic compost to field supply
3	Farm Equipment	Hand tools	Used by farm sections for farming and maintenance of campus
		Grass cutters	
		Utilize equipments from FMPE department	
4	Farm ponds/water tanks	1 farm pond SPV powered water pumping unit	For supply and water pumping from farm pond and tanks
		Water Tank ï 2 Nos	Water storage and supply
5	Meteorological units	1 full-fledged Weather monitoring station (In Collaboration with ISRO)	Recording of weather conditions
6	Misc.	Pilot Plant for Milk Processing including Dairy Technology Lab, chiller unit, spray dryer unit & milk reception unit etc.	201.51 m^2
		Pilot Plant for Fruits and Vegetable including Cottage scale soya paneer plant	124.03 m^2
		Multi stage evaporator with aroma recovery system	20.9m^2
		Shed for Feed and Fodder crusher and seed processing	119.66 m^2

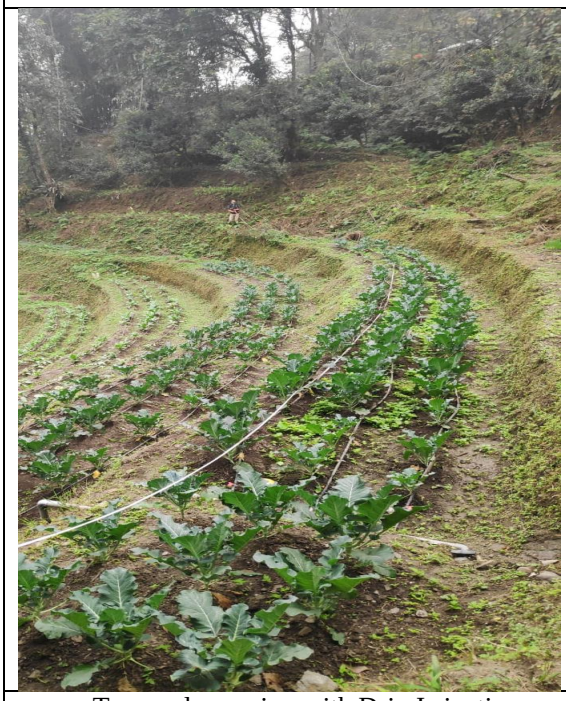
		unit etc	
		Mini Rice Mill	148.65m^2
		Farmerôs Produce Processing cum Skill Development Centre	Area 265.26 m^2) (consisting of Ginger & Turmeric Processing Plant ï Area 72 m^2, Unit of Minimal Processing of Fruits and Vegetableï Area 17.84m^2, Bakery unitï Area 23.78m^2, Noodles unitï Area17.84 m^2, Potato Chips unit ï Area 17.84 m^2, storeï Area 25.65 m^2, kitchen ï Area 17.84 m^2, class roomï Area 27.87 m^2, training hall ï Area 44.6 m^2)

Farm Workshop cum Vehicle shed

Details of Farm workshop, Implement shed and vehicle shed

Facility	**Particulars**	**Remarks**
Farm Workshop	1	The workshop of college is used for fabrication and repairing of farm tools and equipment
Implement shed	1	Farm implements are placed in the Farm Machinery department passage and used by farm section on need basis.
Vehicle shed	0	As such vehicle shed is not available. Vehicles are parked on free space available near college workshop and parking space allotted for various vehicles.

CAEPHT Farm Field



Terraced cropping with Drip Irrigation

Bamboo structured polyhouse

	
Bamboo for Various Crops	Solar Tunnel Dryer

6.5.3.3. StudentREADY/ In-Plant Training / Internship/Experiential Learning Programmes: Yes

The practical of courses for B. Tech (Agricultural Engineering) and B. Tech (Food Technology) is carried out in the laboratories and fields fully equipped with desired instrumentation and facilities. Student practical are conducted as per batches divided based on strength of admitted candidates and as per academic schedule. Students are allowed to perform practical after proper demonstration and skill presentation with precautionary measures. The laboratories and facilities for practical and hands-on-training are fully equipped with number of instruments allowing each individual student to perform practical.

The students of Agricultural Engineering discipline undergo Two five weeks Skill Development Trainings under Hands-on-training after IV and VI semester. The industrial attachment training for 10 weeks and Experiential Learning on campus programme of 12 weeks is carried out in VII semester. The requisite facilities for conduction of experiential learning programme are provided to students to practically fulfill programme requirements and achieve desired skills. Within VIII semester students perform 12 Weeks Project planning and report writing as per ICAR guidelines. The facilities for project are provided to the students as per requirement.

Students have undergone the hands on training for the skill development during the training programme to make them fit for demonstrating the responsibilities effectively in the professional career. During the training students developed the skill in the field of farm machinery training and testing, repair and maintenance, renewable energy, soil and water conservation, design structures, Irrigation and water management, food processing & value addition, post-harvest management etc.

Experiential Learning Modules for B. Tech (Agricultural Engineering)

Department	Module for B. Tech (Agricultural Engineering)
IDE	Layout of irrigation system on field and its cost estimation Planning, design and installation of pressurized irrigation systems. Maintenance and Management of Pressurized Irrigation Systems. Cropping pattern and irrigation management in canal command for major/minor/medium irrigation projects Irrigation and Nutrient Management in Greenhouse

SWCE	Watershed Planning, Development and Evaluation Design & Development of Rainwater Harvesting
FMPE	Farm Mechanization Manufacturing of Agricultural Tools & Implements
REE	Drying of Different Vegetables using Solar dryer Preparation of Briquettes for Furnaces, & Cook Stoves
PFE	Processing and value addition of Milk Products Processing of Horticultural crop Bakery Products Production of Soya Products

Titles of Experiential Learning Modules for B. Tech (Agricultural Engineering) implemented during 2015-16 and 2019-20

No.	Title of EL	Year of Sanction	EL Location	Discipline
1	a) Processing of milk and milk products b) Production of cereal-based extruded product, spices and pine apple	2015-16	PFE Deptt	PFE
2	Participatory Rural Appraisal of ChottaSingtam Village	2016-17	ChottaSingtam Village	SWCE
3	rocessing of milk and milk products and value addition of horticultural crops	2016-17	PFE Deptt & FPPSDC	PFE
4	rocessing of milk and milk products and value addition of horticultural crops	2017-18	PFE Deptt & FPPSDC	PFE
5	Fabrication of improved farm tools and equipment	2017-18	FMPE Deptt	FMPE
6	Design, Development and Performance Evaluation of Polycarbonate Canopy Solar Tunnel Dryer	2017-18	REE Deptt	REE
7	Installation of Gravity Drip Irrigation System for small Vegetable growers	2017-18	IDE Deptt	IDE
8	a) Processing of milk and milk products) Processing and value addition of horticultural crops	2018-19	FE & FPPSDC	PFE
9	Design and construction of Naturally ventilated Poly-house for organic farming	2018-19	SWCE Deptt	SWCE
10	Installation of Gravity Drip Irrigation system for small vegetable Growers	2018-19	IDE Deptt	IDE
11	Development of 3D model of farm machinery	2018-19	FMPE Deptt	FMPE
12	Designed Solar Tunnel Dryer using software CATIA	2018-19	REE Deptt	REE
13	rocessing milk and milk products of	2019-20	PFE Deptt &	PFE

	and value addition of horticultural crops		FPPSDC	
14	Natural Resource Database Management Using GIS	2019-20	SWCE Deptt	SWCE
15	Development of idea to 3D model using CATIA V6	2019-20	FMPE Deptt	FMPE
16	Design, Costing and Depreciation Analysis of Solar Tunnel Dryer (STD)	2019-20	REE Deptt	REE
17	Layout of irrigation system on field and its cost estimation	19-20	IDE Deptt	IDE

Major skills imparted through Experiential Learning Modules for B. Tech (Agricultural Engineering) implemented during 2015-16 and 2019-20

Sl. No.	Year	No. of students trained	Major skills imparted
1	2015-16	07	Formulation and manufacture of value added products Operation and maintenance of processing equipments Development of managerial skills under protected environment Skill to develop Detailed Project Proposal to start entrepreneurship- e) Registration and licensing enterprise to run business
2	2016-17	06	Formulation and manufacture of value added products Operation and maintenance of processing equipments Development of managerial skills under protected environment Skill to develop Detailed Project Proposal to start entrepreneurship e) Registration and licensing enterprise to run business
3	2016-17	04	a) Concept of Venn diagram was developed. SWOT analysis and problem identification in village b) Information on Indigenous and technological knowledge were also obtained
4	2017-18	07	Formulation and manufacture of value added products Operation and maintenance of processing equipments Development of managerial skills under protected environment Skill to develop Detailed Project Proposal to start entrepreneurship Registration and licensing enterprise to run business
5	2017-18	04	Design and installation of gravity Drip Irrigation
6	2017-18	04	Fabrication of improved farm implement
7	2017-18	04	Learned about drying mechanisms and dryer design, installations and utilization
8	2018-19	04	Skill was imparted to design and Construction of naturally ventilated polyhouse
9	2018-19	06	Formulation and manufacture of value added products Operation and maintenance of processing equipments Development of managerial skills under protected environment Skill to develop Detailed Project Proposal to start

			entrepreneurship e) Registration and licensing enterprise to run business
10	2018-19	04	Installation, Maintenance and Hydraulic Evaluation of Drip Irrigation system
11	2018-19	03	Learned about drying mechanisms and dryer design, installations and utilization
12	2018-19	06	• Understanding the components in a machine e.g. Paddy thresher • Determining the accurate dimensions of the machine components • Development of 3D models of the machine components using CATIA V6 • Assembly of the components developed to make the 3D model of the machine Understanding the working mechanism of the machine
13	2019-20	06	Formulation and manufacture of value added products Operation and maintenance of processing equipments Development of managerial skills under protected environment Skill to develop Detailed Project Proposal to start entrepreneurship e) Registration and licensing enterprise to run business
14	2019-20	07	Fabrication of Parshall Flume, Layout of Irrigation System on field, Cost estimation
15	2019-20	07	Learned about drying mechanisms and dryer design, installations and utilization
16	2019-20	07	• Understanding the components in a machine e.g. Paddy thresher • Determining the accurate dimensions of the machine components • Development of 3D models of the machine components using CATIA V6 • Assembly of the components developed to make the 3D model of the machine Understanding the working mechanism of the machine
17	2019-20	04	Study was carried out to obtain information of the natural resource conservation and management by local community

Places of Training for Skill Development Summer Training -I of 5 weeks duration (after IVth semester)

Year	List of Training Institutes **B. Tech 2nd year Agril. Engineering**
2015-16	Southern Region Farm Machinery Training and testing Institute, Anantpur:10 Northern Region Farm Machinery Training and testing Institute, Hisar:02 North Eastern Region Farm Machinery Training and Testing Institute, Assam:12 NERIWALAM, Tezpur:02
2016-17	Central Farm Machinery Training and Testing Institute, Budani, Bhopal:04 Southern Region Farm Machinery Training and testing Institute, Anantpur:06 Northern Region Farm Machinery Training and testing Institute, Hisar:08 North Eastern Region Farm Machinery Training and Testing Institute, Biswanath CharaliAssam:05
2017-18	Central Farm Machinery Training and Testing Institute, Budani, Bhopal:06 Southern Region Farm Machinery Training and testing Institute, Anantpur:12 Northern Region Farm Machinery Training and testing Institute, Hisar:10
2018-19	Central Farm Machinery Training and Testing Institute, Budani, Bhopal:05 Southern Region Farm Machinery Training and testing Institute, Anantpur:13 Northern Region Farm Machinery Training and testing Institute, Hisar:10 North Eastern Region Farm Machinery Training and Testing Institute, Biswanath CharaliAssam:06
2019-20	Central Farm Machinery Training and Testing Institute, Budani, Bhopal: 03 Southern Region Farm Machinery Training and testing Institute, Anantpur:11 Northern Region Farm Machinery Training and testing Institute, Hisar:08
2020-21	Mahindra and Mahindra Ltd, Nagpur

Places of Training forSkill Development Summer Training -II of 5 weeks duration (after VIth semester)

Year	List of Training Institutes **B. Tech 3rd year Agril. Engineering**
2015-16	CIPHET, Ludhiana: 10 ICAR Research complex for NEH Region, Barapani: 09 ICAR-Indian Institute of Soil and Water conservation, Regional centre, Vasad,

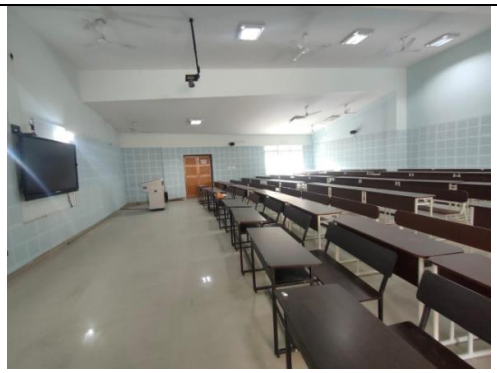
	Gujarat: 10
2016-17	ICAR-Indian Institute of Soil and Water conservation, Regional centre, Udhagamandalam, Tanil Nadu: 05 ICAR Research complex for NEH Region, Barapani: 11 ICAR- Indian Institute of Soil and Water conservation, Regional centre, Koraput:05 One cert, Jaipur: 05
2017-18	ICAR-Indian Institute of Soil and Water conservation, Regional centre, Udhagamandalam, Tanil Nadu: 05 ICAR Research complex for NEH Region, Barapani: 09 CRIDA, Hyderabad:04 CIPHET, Ludhiana:03 ICAR- Indian Institute of Soil and Water conservation, Regional centre, Agra:02
2018-19	Indian Institute of Food Processing Technology, Thanjavur, Tamil Nadu:11 ICAR-Indian Institute of Soil and Water conservation, Regional centre, Udhagamandalam, Tanil Nadu: 04 ICAR Research complex for NEH Region, Barapani: 06 ICAR- Indian Institute of Soil and Water conservation, Regional centre , Agra:04
2019-20	Central Institute of Agricultural Engineering, Bhopal:10 Indian Institute of Food Processing technology (IIFPT), Guwahati: 08 ICAR Research complex for NEH Region, Barapani:09 ICAR-IISWC, Ooty:05 LiklaThangjam Agro, Imphal:05
2020-21	Agrinext Consultancy, Pune Maharastra:21

Centers for In-Plant Training for VII semester for B. Tech (Agricultural Engineering)

Year	List of Training Institutes **In Plant training**
2019-20	LiklaThangjam Agro, Imphal:04 Govt. Fruit Preservation Factory, Singtam, Sikkim: 14 Mizoram Milk Producers Cooperative Union Ltd (MULCO), Aizwal:05 Gomati Cooperative Milk Producers Union Ltd., Agartala: 03 Kanchan Bhog Floor Mill Ltd., Tadong Sikkim:05 Reymond UCO De3nim Pvt.Ltd, Yavatmal, MS: 01 Lambu-Subu Food & Beverages, Lower Subansari, arunachal Pradesh :02
2020-21 Proposed	Govt. Fruit Preservation Factory, Singtam, Sikkim LiklaThangjam Agro, Imphal

6.5.3.4. Curricula Delivery through IT (smart class rooms/interactive board etc.):

The College of Agricultural Engineering and Post-Harvest Technology (CAEPHT) Computer Laboratory, under Central Agricultural University (CAU), Imphal, is well-equipped with 2 smart classrooms having facilities of Interactive whiteboards for conduction of online lectures and smartboard allows projection of images, manipulation of images, dragging, clicking and copying of matter. Simultaneously Teacher is availed with facility to provide handwritten notes on board and same can be saved for later use.



Smart Classroom | **Language Lab**

Computer Lab

6.5.4. Student Development:

6.5.4.1. Student Intake and Attrition:

The College of Agricultural Engineering and Post-Harvest Technology (CAEPHT) presently offers Under Graduate Programmes in Agricultural Engineering and Food Technology *i.e.* B. Tech (Agricultural Engineering.) B. Tech (Food Technology) which is of 4 years duration.

Student intake and attrition in the programme for the five years

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
B. Tech (Agril. Engg.)	30	40	36	33	39	3.33	2.5	8.33	0	12.82
B. Tech (Food Technology)	11	09	09	9	10	15	22.2	11.11	18.18	10
M. Tech (FMPE)	01	0	02	03	2	0	0	0	0	0
M. Tech (SWCE)	03	01	02	05	2	0	0	0	0	0

M. Tech (PFE)	02	02	02	04	2	0	0	0	0	0
M. Tech (IDE)	NA	NA	NA	NA	1	0	0	0	0	0
M. Tech (REE)	NA	NA	NA	NA	1	0	0	0	0	0
Ph.D. (FMPE)	-	1	-	1	2	0	0	0	0	0
Ph.D. (SWCE)	-	-	-	1	0	0	0	0	0	0
Ph.D. (PFE)	-	-	1	1	1	0	0	0	0	0

6.5.4.2. Average Number of Students in Theory and practical Classes :

The number of intake students is manageable due to limited number of seats.

Average number of students in theory and practical classes

Sl. No.	Name of the degree programme	Batch of student in theory	Batch of student in practical
1.	Degree Programme	Full strength	2 batches of equal strength
2.	PG/PhD	Full strength	Full strength

The class rooms and laboratories are sufficient to meet course curricula requirement of the degree programme.

6.5.4.3. Admission Process:

Admission requirements

Candidates seeking admission to various UG degree programmes of the University must have secured not less than 50% marks in aggregate in the relevant subjects as shown below at Higher Secondary/10 + 2/Intermediate examination for General/OBC/UPS category and 40% marks in aggregates for SC/ST including physically challenged/in-service candidates.

The relevant subjects for various UG programmes

B.Tech. (Agril. Engg.)/B.Tech.(Food Technology): *PCM/PCMB*

B = Biology C= Chemistry M = Mathematics P = Physic

Candidates should have passed 10 + 2 examination with English as one of the subject of study. The candidates must have attained 16 years of age on 31st August of the admission year. The selection/nomination of candidates should be made through Common Entrance Test conducted by the concerned State.

Students seeking admission to any of the above degree programmesshall be permanent resident or domicile of any one of the seven North East States of India, *viz*., Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.The number of students to be admitted from each of the seven North East States mentioned to different degree programmes shall be as notified by the University from time to time.

Selection of candidates for admission

The candidate to be sponsored for admission to different degree programmes shall be from the merit list based on the Common Entrance Test conducted by the concerned states. Fifteen per

cent of the approved number of seats in all U.G. programmes except B.V.Sc. & A.H. shall be filled up by the candidates selected on the basis of All India Entrance Test (AIET) conducted by the ICAR or as amended from time to time by ICAR.The ICAR/VCI nominees shall be governed by the eligibility as prescribed by the ICAR/VCI.

Date of admission

The date of admission to a Bachelorôs degree programme shall be as per the announcement made in the Prospectus/Academic Calendar/Semester Calendar and notified by the Registrar.

Documents required at the time of admission

Each student seeking admission in the University shall submit an application in the prescribed form with the following certificates and documents in original before the Admission Committee constituted for the purpose.

(i) Pass Certificate for 10+2 Examination
(ii) Marks sheet of 10+2 Examination
(iii) Certificate of High School pass Examination in support of date of birth
(iv) Migration/Transfer certificate from the Board/Council/University where the candidate studied last
(v) College/School leaving certificate from the authority of the college/school where the candidate studied last
(vi) Conduct certificate from the Principal of the College/School where the candidate studied last
(vii) Permanent residency/domicile certificate of concerned state
(viii) Certificate from competent authority, incase admission is sought under reserved category
(ix) Medical certificate from a Medical Officer not below the rank of Asst. Surgeon in support of physical fitness of the candidate
(x) Any other documents (as per prospectus/notification) that may be required at the time of admission

Registration

The first day of the commencement of the semester shall be the date of registration by the students.

Registration of newly admitted students

i) On admission, a student shall be provided four copies of Registration Cards having different colours, one for the student, one for the advisor, one for the Dean and one for the Registrar, which he shall fill up and register for the prescribed courses for the first semester. The Registration Cards shall be signed by the student, his advisor, the Assistant Registrar (Acad.) and countersigned by the Dean of the College.

ii) On admission and registration, the student shall be provided with an Identity Card with his photograph. The Identity Card shall be returned to the College, when the student leaves the college after completion/discontinuation of the course.

iii) Each newly admitted student shall be given an Admission Number by the Dean of the concerned college and this Admission Number shall continue till allotment of Registration Number by the Registrar.

Note: An orientation programme shall be organized by the Dean of the college for the benefit of the newly admitted students immediately after the commencement of the semester.

Registration of continuing students

On successful completion of a semester, the continuing students shall register for subsequent semester on the date specified in the Academic/Semester Calendar or specifically notified. The following procedures shall be adopted while registering for the second and subsequent

semesters of the degree programme:

(i) Students shall register the requisite course in person. In absentia registration will not be permitted under any circumstances.
(ii) Submission of no due certificates from all the departments and units of the college
(iii) Payment of prescribed fees
(iv) Submission of the prescribed Registration Cards duly filled in and signed by all concerned.

6.5.4.4. Conduct of Practical and Hands on Training: Yes

The practical classes is being conducted every day for minimum of two hours for each subjects




Students during practical classes

6.5.4.5. Examination and Evaluation Process:

The college strictly adheres to the examination and evaluation system as recommended by the V Deansô Committee. As such, the college follows Uniform Grading system with uniform OGPA requirements for award of degrees at all levels. A uniform conversion formula is followed for declaration of I, II and III divisions, distinction etc.

Examination

Semester system is being followed for UG programmes and evaluation is given weightage as 50% internal and 50% external.

Courses with Theory and Practical

6.5.4.5.1. Mid-term Exam (30%) + Assignment (5%) in practical oriented courses + Practical(15%)

Courses with only Theory

6.5.4.5.2. Mid-term Exam (40%) + Assignment(10%)

Courses with only Practical

6.5.4.5.3. 100% Internal

Keeping this in view, the schedule and weightage to different examination are as follows:

Particulars	**Course credits**									
	2+1		**1+1/2+2**		**1+2**		**1+0/2+0**		**0+1/0+2**	
	T	**P**	**T**	**P**	**T**	**P**	**T**	**P**	**T**	**P**
Mid-term exam	30	-	30	-	30	-	30	-		
Quiz/Continuous evaluation	20	30	20	30	20	30	20	-	-	30
End-term exam	50	70	50	70	50	70	50	-	-	70
Maximum marks	100	100	100	100	100	100	100	100	-	100

* At least 4 number of quizzes are conducted for eachcourse

Duration of exams

Mid-term theory exam	:	1½ hours
End-term theory exam	:	2½ hours
End-term practical exam	:	3 hours

Evaluation

- The evaluation of studentsô performance is achieved by conducting Quizzes of 20 marks (Internal),Mid-TermExaminationof30marks(Internal)andEnd-TermExamination(External)of 50 marks. The practical examination consists of 100 marks.
- The questions and answer scripts for quiz and Mid-term examinations are set and evaluated by concerned course teacher.
- The questions and answer scripts for End-term examinations are set and evaluated by external examiners selected duly from a list of panel members by the competent authority.

Degree	**Percentage of Marks Obtained**	**Conversion into Points**
B. Tech (Agricultural Engineering)	100	10 Points
	90 to <100	9 to <10
	80 to <90	8 to <9
	70 to <80	7 to <8
	60 to <70	6 to <7
	50 to <60	5 to <6
	<50 (Fail)	<5
	Example 80.76	8.076
	43.60	4.360

72.50 (but shortage in attendance)	Fail (1 point)

he following ranking pattern is adopted to award the degrees:

OGPA	Division
5.000-5.999	Pass
6.000-6.999	II division
7.000-7.999	I division
8.000 and above	I division with distinction

GPA, CGPA and OGPA are calculated as follows:

GPA	=	Total points scored / Total credits (for 1 semester)
CGPA	=	× Total points scored / Course credits
OGPA	=	× Total points scored (after excluding failure points)/ Course credits
Percentage of Marks	=	OGPA × 100/10

6.5.4.6. NCC/NSS/RVC Units:

NSS unit in the college does not exist.

6.5.4.7. Language Laboratory:

The language laboratory is under construction at College of Agricultural Engineering and Post-Harvest Technology, Ranipool campus. The audio-visual aids are planned to be used for modern teaching methods to teach the English language. The language lab will offer an exclusive result oriented and efficient English language learning process. The language lab will be developed on the methodology of LSRW (Listening, Speaking, Reading and Writing) skills. It also helps in developing skills in presentation, interviews, Group Discussions, Public Speeches and soft communication skills. The contents will include activities, exercises and home assignments with audio-visual modules. There will be a special module on preparation for online competitive exams such as GRE, TOEFL, and IELTS etc.

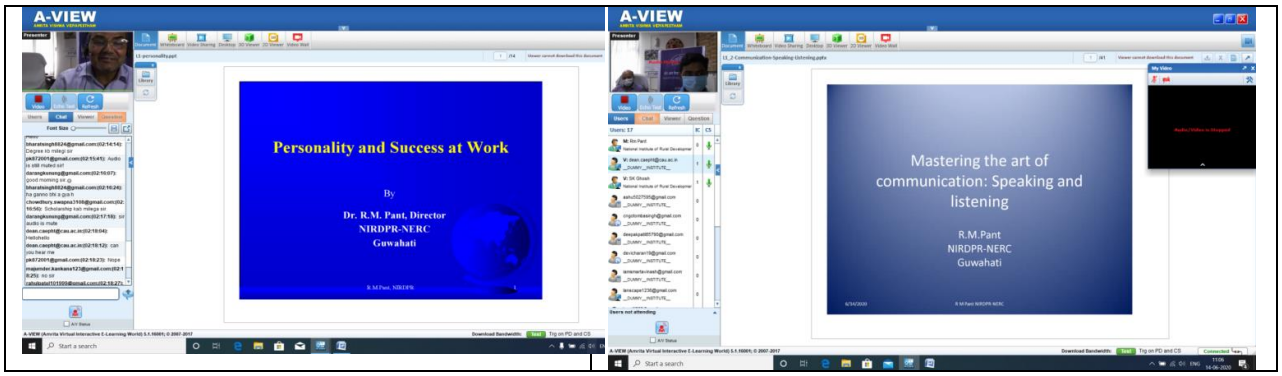
6.5.4.8 Cultural Centre:

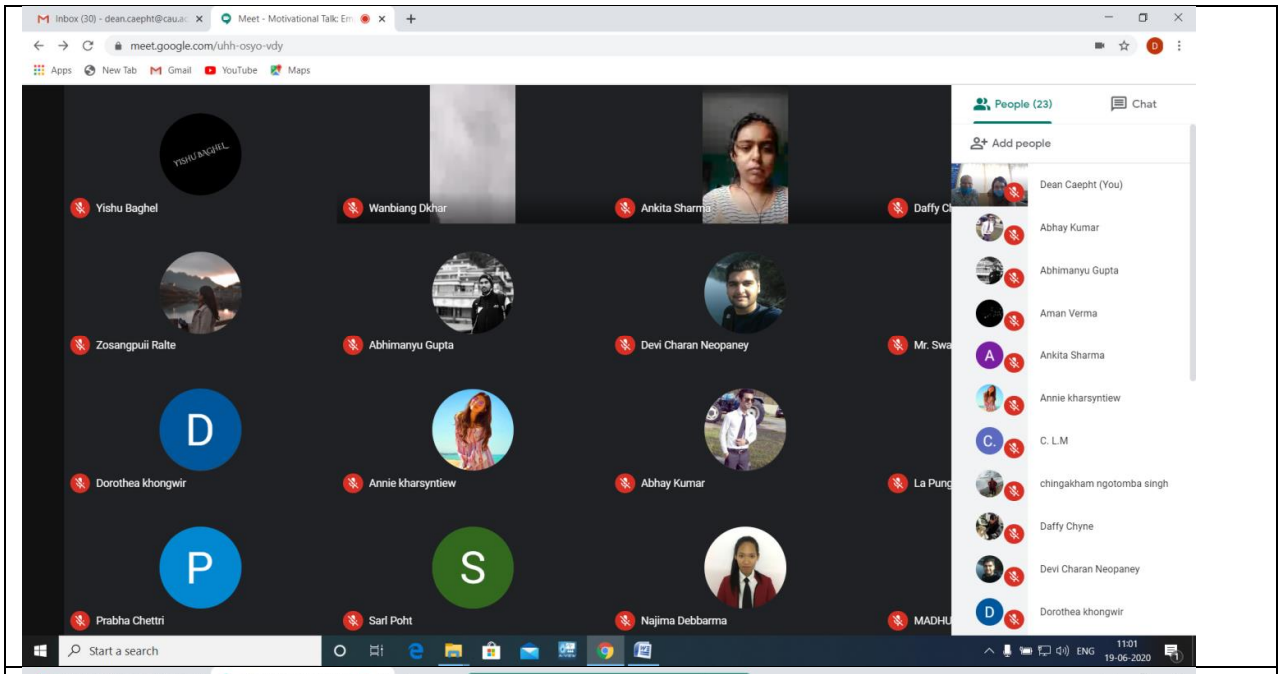
The college has a Student Activity Centre which is exclusively empowered to explore and equip the students for multi-varied cultural activities. The Cultural Committee is formed comprising of faculties, staff and students along with the Student Welfare Officer of the College. Different types of clubsô function under the Committee such as the Music, Theatre, Literary and FineArts.

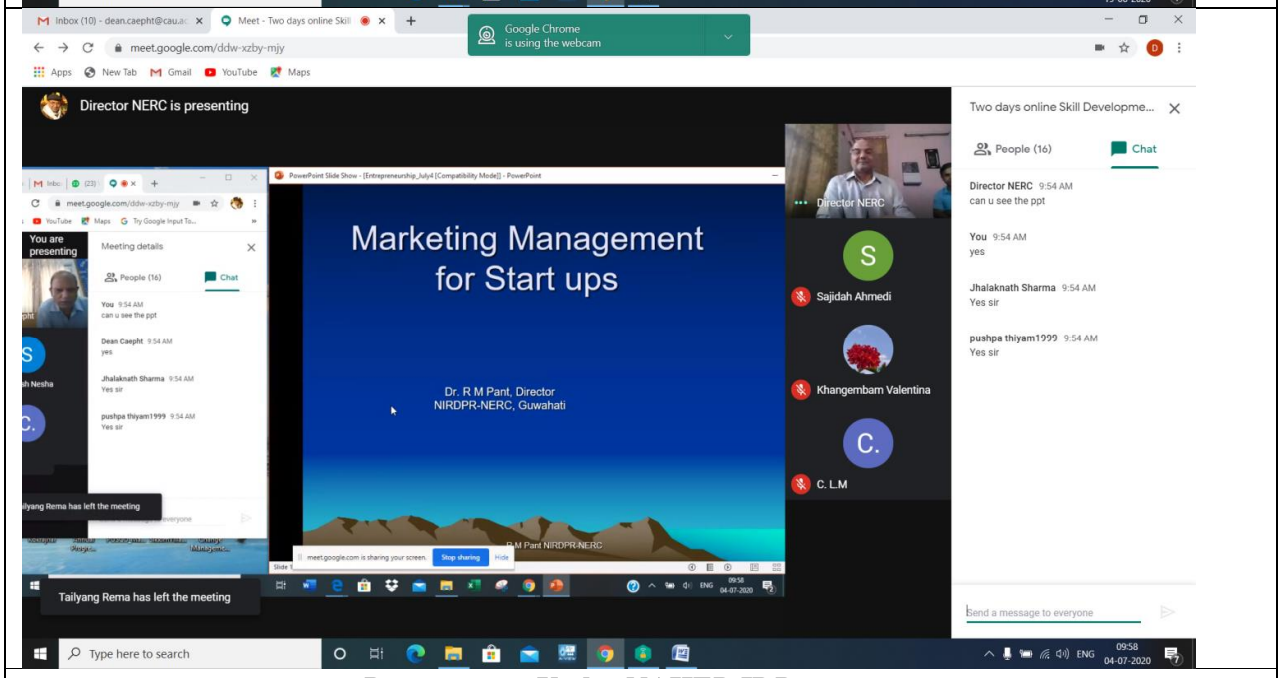
Students performing in cultural programmes

6.4.5.9 Personality Development:

Besides the four compulsory courses under the Deanôs Committee syllabus which cater to the overall personality development of the students, the College of Agricultural Engineering and Post-Harvest Technology invites renowned achievers from the different places to interact with students for motivational talk and experience sharing. Various lecture series have been organized under NAHEP-IDP project for students.







Programmes Under NAHEP-IDP

6.5.5. Physical facilities:

6.5.5.1. Hostels:

The infrastructure of College of Agricultural Engineering and Post-Harvest Technology has various facilities like academic block, administrative block, and separate hostels for boys and girls, Auditorium. Basic medical facilities are centrally available at the Medical Unit of the college where basic medical amnesties such as antipyretics, antibiotics, anti-diarrheal etc. are available. Also, facilities for I.V. injections and fluids and suture needles and materials are available for minor suturing. First aid kits are issued to all hostels. Medical experts are invited to deliver special

lectures on self-hygiene, tobacco and its toxicity, nutritious foods for healthy living etc.


Boys Hostel


Girls Hostel

6.5.5.2 Examination hall:

Separate exam halls are unavailable and hence normal classrooms are rearranged as exam halls during the time of exam, the details of which are:

No. of classrooms	:	8
Capacity	:	Varied capacity ranging from 20-40 sitting capacity
Facilities available	:	Chairs, writing desks, electrical fans and lights
Amenities	:	Washroom, wash basin and running water

6.5.5.3 Sports and Recreation Facilities:

The students are provided with all types of physical exercises during the classes and in physical experience class to keep them physically fit and healthy. In addition, the skill development in any one of the games such as badminton, volleyball, football, cricket, table tennis and athletics is contemplated in the physical education programme. Maintenance and cleaning of the ground are regularly done for use by the students. Matches are conducted for the students during the annual sports day and intercollegiate meets or any other specific days such as the Foundation Day, Republic Day etc. to

improve and maintain their skills using ground facilities. Indoor games such as carom, chess, badminton and table tennis are also available.

Students in Sports Week

6.5.5.4. Auditorium:

Auditorium of CAEPHT

The College of Agricultural Engineering and Post-Harvest Technology has full facilitated auditorium at present. The details of the auditorium are as follows:

Does the college have auditorium	Yes
Year of construction and sitting capacity	2013; 300 number sitting capacity

How frequently the auditorium is used and purpose for being use	• College Day (Once ayear) • Republic Day (Once ayear) • Foundation Day (Once ayear) • Independence Day (Once ayear) • Inauguration programmes (Numerous times ayear) • National and International workshops (Numerous times ayear) • Invited Lectures (Numerous times a year) • Teachers Day • Fresherôs Day

6.5.5.5. Exhibition Hall/Museum:

College of Agricultural Engineering and Post Harvest Technology have established the Agricultural Technology Information Centre (ATIC) in 2008. This is a ñ**Single Window System"** to allow optimistic interaction between farmers, scientists and other stakeholders for effective technology transfer developed by the College and Central Agricultural University, Imphal. It has mandate for providing information and providing training on improved Agricultural Engineering and Post Harvest Technologies to the farmers, entrepreneurs and other stakeholders within the jurisdiction of the Central Agricultural University, Imphal, Manipur.

It has facilities of display of information, equipment/machineries, charts/photographs and college publications and sell of the technologies developed by the college through Agri.-Business Centre in addition to organizing trainings for farmers. The Agri.-Business Center of ATIC caters the need of farmers and other stakeholders through display and sale of improved/developed farm tools, processed and value added products and farm products of Farmerôs Producerôs Organizations (FPOs), processed and other value added products.

The Centre is working under the direct control of Dean of College, who arranges the necessary facilities to the scientists engaged in rendering regular service to the farmers of the NEH region including Sikkim. The Director of Extension Education of CAU Imphal, Manipur from time to time gives guidance to ATIC in organizing various activities.

Facilities:

- **Conference Hall:** A well-furnished AC conference hall with 45 persons seating capacity fitted with multimedia projector along with Wi ï Fi / Internet connectivity.
- **College Museum:** Displays the different tools/ implements and technology developed by the College and University.
- **Training Hall:** Well - furnished training hall with 30 persons seating capacity for the farmers training.
- **Exhibition Hall:** Displays the various charts, photographs and related information on different research works of the university.
- **Visitors Room:** It is a discussion-cum-refreshment room for the visiting dignitaries & others.
- **Interactive Kiosk:** It is simply based on Touch Screen System. It provides all the information to the farmers/visitors regarding package of practices of almost all tools/ implements developed by CAEPHT, Ranipool.
- **Organic Cell:** A separate cell has been created for imparting traditional knowledge of farmers practicing organic farming for visiting farmers & other interested groups at College.

ATIC Building

Agri-Business Centre

ATIC Entrance

6.5.6. Research Facilities

6.5.6.1 Postgraduate Laboratories and Equipment's:

Currently college is offering Under Graduate, Post Graduate and DoctoralProgramme. Laboratories used for Undergraduate studies, same are being used as Post Graduate Laboratory.List of equipment available in college are as follows:

Number of laboratories available

Sl. No.	Section	No. of laboratories available for UG
1.	Farm Machinery	01
2.	Farm Power	01
3.	Ergonomics and Safety	01
4.	Soil Dynamics	01
5.	Farm Machinery Testing	01
6.	Thermodynamics and Heat Engine	01
7.	Theory of Machine	01
8.	Workshop	01
9.	Renewable Energy	01
10.	Renewable Energy Field Lab 1	01
11.	Renewable Energy Field Lab 2	01
12.	Surveying Lab	01
13.	Engineering Mechanics Lab	01
14.	Soil and water Conservation &Soil Mechanics Lab	01
15.	Strength of Material Lab	01
16.	Remote Sensing and GIS lab	01
17.	Engineering Drawing	01
18.	Fluid Mechanics & Irrigation Drainage Engg.	01
19.	Soil &Water Quality	01
20.	Food Engineering Laboratory	01
21.	Process Engineering Laboratory	01
22.	Agricultural Structures & Environmental Control Engineering Laboratory	01
23.	Food Analytics Laboratory	01
24.	Pilot Plant	07
25.	Farmersô Produce processing ï cum ï Skill Development Center	01
26.	Biochemistry and Microbiology Laboratory	01
27.	Electrical, Electronics and Instrumentation Laboratory	01
28.	Computer Laboratory	01
29.	Physics Laboratory	01

Department/Section wise Functional Laboratories available

Sl. No.	Department/Section	Area (Sq. m.)	Remarks
1.	***Farm Machinery and Power Engineering***		
	08 Laboratories	90 m^2 128 m^2 135 m^2 160 m^2	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements *etc*.

		40 m^2 34 m^2 34 m^2 323 m^2	
2.	***Soil and Water Conservation Engineering***		
2.	06 Laboratories	39 m^2 81 m^2 135 m^2 105 m^2 58.5 m^2	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements etc.
3.	***Irrigation and Drainage Engineering***		
	02 Laboratories	225 m^2 40.32 m^2	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements *etc*.
4.	***Processing and Food Engineering***		
	06 Laboratory	228.28 m^2 92.77 m^2 80.71 m^2 93.24 m^2 124.03 201.51 m^2	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements *etc*. Equipment for processing of horticultural produces.
5.	***Renewable Energy Engineering***		
	01 Laboratory 02 Field Laboratories	140 m^2 75 m^2each	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements *etc*
6.	***Basic Engineering and Applied Sciences***		
	03 Laboratory	225 m^2 133.48 m^2 53.4 m^2	Equipped with all necessary instruments & lab infrastructure with basins, water, electricity, sitting arrangements *etc*

a) **Lists major Equipments:**

The laboratories are well equipped to conduct the practical/hands on training to the students with instruments, laboratory tables, basins, irrigation facilities, electrical and ventilations, adequate wooden furniture etc. The lists of instruments/ equipments available in the laboratories are furnished below:

No.	Department	Equipments
1.	**Department of Farm Machinery and Power Engineering**	**Farm Machinery Laboratory** **Area: 90 m^2** 1. Multi Crop Thresher 2. Self-Propelled Vertical Conveyor reaper 3. T/D inclined plate planter 4. Pedal cum power operated cleaner and grader 5. Rigid tyne cultivator 6. Spring loaded cultivator 7. Tractor mounted offset disc harrow 8. Tractor mounted disc plough 9. Tractor mounted M.B.plough 10. Modular inclined plate planter

		11. Tractor mounted raised bed planter 12. Tractor mounted seed cum fertilizer drill 13. Multi crop plot thresher 14. Semi axial flow thresher (SAF 750) 15. Auger digger 16. Power tiller operated seed cum fertilizer drill 17. Manual seed cum fertilizer drill 18. manual groundnut decorticators 19. Manual rice trans planters 20. Pre-germinated paddy seeder (4 rows) 21. Manual hand tools and equipments like wheel hand hoe, Hand Ridger, Grubber weeder, Serrated sickle, Naveen Dibbler, hand maize sheller etc. 22. knapsack prayers 23. Rocking sprayer 24. Hand rotary duster 25. foot sprayer 26. Ganesh sprayer 27. Parth Hand Sprayer 28. Hand compression sprayer 29. Motorized knapsack mist blower cum dusterr 30. Pedal operated thresher 31. Power operated wire-loop thresher with winnower 32. Small power paddy thresher (hold-on type) 33. Small power paddy thresher (Axial Flow type) 34. Animal drawn patella harrow 35. Animal drawn patella puddler 36. Animal drawn three row seed drill 37. Animal drawn 3 row seed cum fertilizer drill 38. Animal drawn 2 row mustard drill 39. Animal drawn lug wheel puddler 40. Animal drawn ground nut digger 41. Mini power maize sheller 42. Mini power chaff shredder 43. Manual and motor operated chaff cutter **2. Farm Power Laboratory** **Area: 128 m^2** 1. Single cylinder two stroke petrol engine 2. Single cylinder 4 stroke diesel engine 3. Tractors (Mahindra B 275, New Holland) 4. Power tillers (12 hp, 6.5 hp, 5.5 hp) 5. Tractor Working Cut Model 6. Diesel fuel supply system model 7. Clutch system model 8. Brake System model 9. Stearing mechanism of tractor model 10. Cut model of 2 stroke Diesel engine 11. Cut model of 4 stroke Diesel engine 12. Actual cut model of single cylinder 2-stroke engine 13. Cross section of cylinder block 14. Components of engine (crank shaft, piston, connecting rod, rocker shaft, valve, valve spring guide etc.)

		3. Ergonomics And Safety Laboratory **Area: 135 m^2** 1. Integrated Composite anthropometer (ICA) 2. computerized electric ergometer 3. Computerized human energy measurement system with telemetry (K4B2) 4. Polar heart rate monitor 5. Strength measurement setup 6. Novatech load cell 7. Sphygmo manometer 8. Stethoscope 9. Thermometer (digital) 10. Digital Camera **4.Soil Dynamics Laboratory** **Area: 160 m^2** 1. Automated soil bin with sensors and digital control panel 2. Dynamometer 3. Motorized sieve shaker 4. IS Sieve set for soil analysis 5. soil analysis kit 6. Proving ring cone penetrometer **5. Farm Machinery Testing Laboratory** **Area: 40 m^2** 1. Digital tachometer 2. digital soil moisture meter 3. Digital thermometer 4. Digital anemometer/barometer/humidity sensor 5. Digital weighing balance 6. Digital vibration and noise meter 7. Digital soil penetrometer 8. Digital energy logger 9. Spray patternator testing rig 10. Mini tractor (Kubota 21 hp) 11. Rotavator for small tractor **6. Thermodynamics And Heat Engine Laboratory** **Area: 17 m^2** 1. Multi-cylinder petrol engine test rig with electric dynamometer 2. Twin cylinder diesel engine test rig with electric dynamometer 3. Two stroke petrol engine test rig with rope brake dynamometer 4. Single stage air compressor test rig 5. Lancashire Boiler model 6. Cochran Boiler model 7. Cornish Boiler model 8. Vertical water tube boiler model 9. Locomotive Boiler model 10. Babcock & Wilcox Boiler Model 11. Model of steam engine

		12. Boiler mountings and accessories model (Blow off cock,stopvalve,feed check valve,economiser,pressuregauge,watergauge,fusibleplug, dead weight safety valve,spring loaded safety valve) 7. **Theory Of Machine Laboratory** **Area: 17 m^2** 1. Universal Governor Apparatus 2. Cam Analysis Apparatus 3. Motorized Gyroscope 4. Static & Dynamic Balancing Apparatus 5. Coriollis component of acceleration apparatus 6. Epicycle Gear train apparatus **8. College Workshop** **Area: 323 m^2** 1. HMT Lathe machine (05 Nos) 2. wood working lathe machine 3. Power hacksaw machine 4. Radial drill machine 5. Overhead crank shearing machine 6. Hydraulic press 7. Arc welding machine (2 Nos) 8. MIG welding machine 9. TIG welding machine 10. Gas welding setup 11. Pipe bending machine 12. Sheet rolling machine 13. Pedestal grinder machine 14. Chop saw machine 15. Work tables with bench vices 16. Carburizing furnace 17. Painting oven 18. Sheet sheering machine 19. Milling machine 20. Shaper machine 21. Smithy furnace with envils and swedge block
2.	**Department of Soil and Water Conservation Engineering**	**A. Surveying Laboratory** 1. Metric Chain (20 m) 2. Metric Chain (30m) 3. Field Book 4. Optical Square 5. Plum Bob 6. Plane Table Set 7. Ranging Rod 8. Steel Scale 9. Steel Tape (5m) 10. Cloth Tape (30m) 11. Metallic Tape (30m) 12. Abney Level 13. Automatic Level (Manual) 14. Arrows 15. Cross Staff & its Rod

		16. Levelling Staff(5m) 17. Offset Rod 18. Plum Bob 19. Planimeter 20. Prismatic Compass with Stand 21. Ranging Rod (3m) 22. 20.Theodolite 23. Drop Arrows 24. Ghat Tracer with Stand 25. Plane Table Set with Stand 26. Ranging Rod (big) 27. Ranging Rod 28. Ranging Rod (small) 29. Meter Roll (measuring tape 3 m) 30. Meter Roll (measuring tape 30m) 31. Levelling Staff (6m, 3 parts) 32. Dumpy Level with Stand 33. Guntur Chain 34. Revenue Chain 35. Engineer Chain 36. Line Ranger 37. Pedometer 38. Prime Square 39. Steel Band 40. Tangent Clinometer 41. Wooden Peg **Engineering Mechanics Laboratory** 1. Bar-Pendulum & Compound Pendulum 2. 2.Bar of Beam Apparatus 3. Bending Moment Apparatus 4. Bell Crank Lever 5. Compound Lever (Ambo/Usha) 6. Crank Compound Lever 7. Friction Side Apparatus 8. Hookôs Law 9. Young Modulus Apparatus 10. Worm & Worm Wheel 11. Link Polygon Apparatus 12. Joint of Roof Truss on Wheels 13. Law of Moment Apparatus 14. Law of Conservation of Mass Apparatus 15. Mechanism Model 16. Moment Disc Apparatus 17. Moment of Inertia of Fly Wheel Apparatus 18. Polygon of Forces Apparatus 19. Parallel Force Apparatus 20. Pulley Sets 21. 21.Parallelogram Law of Forces 22. Regidity of Wire Apparatus 23. Rope & Drive Belt Experiment Apparatus 24. Second Law of Motion Apparatus 25. Shear Leg Apparatus

		26. Screw Jack Experiment 27. Stress in Beam Apparatus 28. Triangle Law of Forces 29. Torison Apparatus 30. Universal Force Table 31. Western Differential Pulley 32. Wheel & Wheel Axles **Soil Mechanics Laboratory** 1. Drainage and Seepage Tank 2. Canopy Analyser 3. Automatic Sediment Analyser 4. Neutron Probe 5. Moisture Meter 6. Hydro Metrological Data Acquisition 7. Laser Leaf Areameter 8. Portable Turbidity Meter 9. Triaxial Cell Test 10. Anemometer 11. Barometer 12. Constant Temperature Water Bath 13. Consolidated Apparatus (single gang) 14. Coshocton Wheel Silt Sampler 30cm 15. Determination of Grain Size Analysis 16. Hydrometer 17. Core Cuter 18. Cone Penetrometer & Plastic Limit 19. Vicat Apparatus 20. Hook Gauge & Point Guage 21. National Brand ôHô Flume 22. Laboratory Permeability Apparatus 23. Liquid Limit Apparatus 24. Model of Chute Spillway, Drop Inlet & Drop Spillway 25. Moisture Box 26. Rain Gauge (Self Recording) 27. Rain Gauge (Non Recording) 28. Soil Infiltrometer 29. Soil Grinder 30. Self Recording Rain Gauge 31. Stage Level Recorder 32. Standard Proctor 33. Shrinkage Limit 34. Top Pan Balance 35. Unconfined Compression Tester 36. Rapid Moisturemeter 37. Water Level, Meta Mini Water Level 38. Weighing Pan Top 39. Well Water/Level Meter 40. Shear Apparatus 41. Wet & Dry Bulb Temperature 42. Microprocessor Based Automatic Sampler **Strength of Material Laboratory**

		1. Fatigue Testing Machine 2. Hardness Test Machine 3. Universal Testing Machine **Remote Sensing and GIS Laboratory** 1. Arc GIS 2. Plotter 3. ERDAS 4. Geometica Software 5. Scanner 6. Surface Water Modelling 7. Watershed Modelling System 8. GPS 9. Computers-10 nos.
3.	**Department of Irrigation and Drainage Engineering**	1. Francis Turbine 2. Hydraulic Bench 3. Pelton Wheel Turbine 4. Centrifugal Pump Test Set up 5. Determination of Bernoulliôs Theorem 6. Darcyôs Apparatus 7. Friction in Pipeline 8. Flow through Mouthpiece 9. Flow through Orifice 10. Reciprocating Pump Test Set-up 11. Flow Over Notch Apparatus 12. Gear Pump Test Set up 13. Hydraulic Rig Ram (closed circuit) 14. Jet Pump Test Rig 15. Measurement of Irrigation Water 16. Manometer and Pressure Guage 17. Open Channel Apparatus(closed circuit) 18. Reciprocating Pump Test Set up 19. Reynolds Apparatus 20. Set up for Pipe in Series 21. Set up for Pipe in Parallel 22. Set up for equivalent Length of Pipe 23. Tilting Hydraulic Flume 24. Mono Block Single Phase Pump 25. Kiloskar Pump 26. 26. Impeller (1220 , KDS 5212, Bronze, Sp3L) 27. Flash Pump/Tube Well Pump 28. Ger Pump 29. Portable Turbity Meter 30. Oven 31. Electrical Conductivity Meter 32. Double Ring Infiltrometer 33. Ph Meter 34. Moisture Boxes 35. Augers 36. Sieve Shaker 37. Cut Section of Centrifugal Pump, Submersible Pump and Turbine Pump

		38. Positive Placement Pump (Hand Pump) 39. Water Level Meter 40. Pump Testing Rig
4.	**Department of Processing and Food Engineering**	**Food Engineering laboratory** **Area-** 228.28m^2 1. Steam Distillation set up 2. Fruit pulper 3. Feed mixer (planetary mixer, planatory mixer (vacuum jacketed), planatory mixer (heating jacketed), double cone mixer, Blender SVB, Cube Mixer, Lab Kneader, Powder Mixer, Agitator, Drum Hoop Mixer-SDHM, Lab mass mixer SLMM, horizontal main drive SHMD-A.C., Universal Gear) 4. Spice processing plant a. Ginger /Turmeric peeler cum polisher b. Garlic Bulb Breaking Machine c. Garlic Clove Flaking Machine 5. Coconut tree climber 6. Coconut dehusker 7. Pasta Extruder 8. Essential Oil distillation Unit i. Solid Liquid Extraction unit ii. Steam Distillation Set up 9. c)Simple batch distillation unit 10. Refrigerated centrifuge with Micro processor 11. Rotary vacuum filter & Leaf Filter 12. Refrigerated centrifuge CPR 24 13. Plate heat exchanger 14. Usha make Gerber Centrifuge 15. Usha make centrifuge separator 16. Vegetable Blancher 17. Vacuum Tray Dryer 18. General cycle refrigeration trainer 19. Heat transfer through lagged pipe apparatus 20. Heat transfer through composite walls apparatus 21. Mechanical heat pump trainer 22. Plate type heat exchanger 23. Recirculation type air conditioning trainer 24. Stefan Boltzmann apparatus 25. Thermal conductivity of insulating slabs by guarded hot plate method 26. Thermal conductivity of insulating powder 27. Micrometer Precise Thickness **Process Engineering laboratory** **Area-** 92.77m^2 1. Weighing balance 2. Shrink Wrapping Machine 3. Hand wrapper 4. Foot Sealer 5. Aspirator Cyclone Separator 6. Automatic Foam Fill Seal Packaging Machine 7. Rubber Roll Sheller

		8. Rice Whitener/Polisher 9. Indented Cylinder Grader/ Separator 10. Vibratory Screen Grader 11. Freeze Dryer 12. Laboratory Spray Dryer 13. Cream Separator 14. Freeze Drier 15. Vacuum Packaging Machine 16. Steam Jacketed cooking kettle 17. Butter churn 18. Vacuum oven 19. Vacuum Tray Dryer 20. Laboratory Pasteurizer 21. Shrink Packaging Machine Model-CP-2030 22. Laboratory homogenizer 23. Micro Pulveriser (hammer mill) 24. Feed and Fodder crusher 25. Feed Block Formation Machine 26. Food Extruder 27. Fruit and Vegetable Juice and paste Processing Plant 28. Automatic form fill seal packaging machine 29. Boerner conical divider 30. Bucket elevator 31. Multipurpose grain mill 32. Super critical fluid extraction unit 33. Foot Sealer 34. Fermenter 35. Hand sealer 36. Hand wrapper 37. Electronics Grain Moisture Meter 38. Angle of Repose **Agricultural Structures & Environmental Control** **Laboratory Engineering laboratory** **Area-** 80.71 m^2 1. Digital Humidity Sensor and Indicator 2. Hot Air Oven 3. Electronic weighing balance (2.2kg) 4. Electronic weighing balance ZSP-350 (300g) 5. Digital balance model ï (A-224) make Contech Capacity-220gm 6. Digital Precision Electronic Balance 7. Apparatus for thermal conductivity of insulating powder 8. Convection apparatus (natural) 9. Convection apparatus (forced) 10. Concentric tube heat exchanger (finned tube type) 11. Concentric tube heat exchanger (plain tube type) 12. Emissivity measurement apparatus 13. Digital humidity Sensor and indicator 14. Digital temperature meter **Food Analytics laboratory** **Area-**93.24 m^2 1. Electronics Socs Plus Automatic Three Place Solvent

		Extraction Apparatus (Soxlet) 2. Microscope-Ex-21 set Binocular Brand-OLYMPUS 3. Viscometer 4. Usha Make Centrifuge Separator 5. 5. Usha Make Gerber Centrifuge (2nos) 6. Water Activity Meter 7. Auto Clave 1 set2òX20ò 8. Digital Satorious Infra-red Moisture Meter 9. pH meter 10. Samsung Freeze with stand 11. Water Purification System 12. Milk analyzer Master Clasic 13. Oxygen and CO2 Headspace Gas analyzer plus Flexible packaging kit 14. Microwave oven 15. Water Bath 16. Food texture analyzer 17. Rapid viscoanalyzer 18. BOD Incubator with shaker 19. Automatic Fibre Extraction system 20. Digital Refractrometer PAL 21. Laminar Flow **Pilot Plant** **Area-** 248.06 m^2 1. Fruit and Vegetable Plant 2. Milk Processing Plant 3. Multi stage evaporator with aroma recovery system 4. Cottage scale soya paneer plant 5. Seed processing plant 6. Modern rice mill (0.5 t/h capacity) 7. Mini Dal Mill **Farmers' Produce processing – cum – Skill Development Center** 1. Drier machine for Ginger, Cardamom, Chillies 2. Ginger Washing Machine 3. Vegetable Cutting Machine 4. Ginger Processing Machine (Complete Unit) 5. Turmeric Grinder 6. Potato Slicer 7. Vegetable Washing Machine 8. Complete unit of Potato Chips Machine 9. Complete Unit of Biscuits Making Machine 10. Complete Unit of Noodle Making Machine 11. Ginger Paste and Powder Making Machine
5.	**Department of Renewable Energy Engineering**	1. Agni-star Gasifier 2. Air Quality Meter 3. Air Quality Monitor with Laptop 4. Aluminium Pots 5. Bio-gas Analyzer 6. Biogas Lamp 7. Biomass Cookstove

		i. Natural Draft biomass cookstove ii. Forced Draft biomass cookstove 8. Bomb-Calorimeter 9. Box-type Solar Cooker 10. Cloud and Pour Point Apparatus 11. Cookstoves with Air Insulation 12. Data logger 13. Digital Anemometer 14. Digital Balance (15 kg) 15. Digital Lux meter 16. 16.Digital Multimeter 17. Digital PH meter 18. Digital Stop watch 19. Digital Tachometer 20. Digital Temperature Indicator 21. Digital Thermo-hygrometer 22. Digital Thermometer Non-contact type 23. Digital Wood moisture meter 24. Direct Type Solar Dryer 25. Double distillation Apparatus 26. Electric air blower 27. Electric weighing balance 28. Gas flow meter 29. Glass thermometer 30. Glass water distillation 31. Hand operated briquetting machine 32. High Precision balance 33. Hot Air oven 34. Hot wire Anemometer 35. IDB Gasifier stove (Ceramic) 36. IDB Gasifier Stove (Smokeless) 37. Improved downdraft biomass combustion device 38. Indirect type solar cabinet dryer 39. Lux meter 40. Mixed mode type solar dryer 41. Muffle furnace 42. Multichannel digital temp. indicator 43. Orsat Apparatus 44. Parabolic Dish Solar Cooker 45. pH meter 46. Pressure Gauge 47. Pyranometer 48. Ried Vapor Pressure Test apparatus 49. Shakti-Surahi Biomethanation plant 50. Small scale box type biochar kiln 51. Solar Concentrator Training Kit 52. Solar Cooker Box type 53. Solar Lantern 54. Solar Power Photovoltaic training Kit 55. Solar Refrigerator 56. Solar Still 57. Solar Street light system 58. Solar water pumping system 59. Sound level meter

		60. SPV Home lighting System 61. Sunshine Recorder 62. Test setup for thermosiphon system type solar water heater 63. Thermocouple base thermometer with display unit 64. Turbine type flow meter 65. Water bath shaker 66. Weighing balance 67. Wood moisture meter
6.	**Department of Basic Engineering and Applied Sciences**	**Biochemistry/Microbiology/ Agriculture Laboratory** **Area**: **225m^2** 1. Analytical balance 2. Block digestion system 3. Colony counter 4. Vortex mixer 5. Chlorophyll meter 6. Refrigerated circulator 7. High speed refrigerated centrifuge 8. Ultra quartz distillatory 9. Flame photometer 10. Hot plate 11. Hot air oven 12. Microcentrifuge 13. 13.Magnetic stirrer 14. Rotary vacuum flask 15. Rotary shaker 16. Spectrophotometer UV/Vis Double Beam 17. Viscometer 18. Water bath shaker 19. Microwave oven 20. Bacteriological Incubator 21. Chromatographic oven 22. Monocular microscope 23. Compound microscope 24. Horizontal electrophoresis unit 25. Autoclave 26. BOD incubator 27. Water distillation plant 28. Quartz double distillation unit 29. Kjeldahl distillation and digestion unit 30. pH meter 31. Conductivity meter 32. Polarimeter 33. Refrigerator **Electrical, Electronics and Instrumentation Laboratory** **Area: 133.48 m ^{2}** i) Electrical Laboratory 1. Cut section of DC motor 2. Cut section of single phase AC motor 3. Cut section of 3 phase AC motor 4. Single phase transformer of 1 KVA rating 5. Single phase Variac (0-260 Volt) 6. DOL,StarDelta,Auto Transformer starter 7. DC machine with motor generator set.(for OCC of motor)

		8. AC split phase motor 1 HP 9. 3 phase squirrel cage induction motor with ponney brake (1 HP) 10. 3 phase induction motor with ponney brake (2.2kW) 11. Single phase Induction motor to study the effect of capacitor 12. 3 phase induction motor ï generator set for load test of induction motor 13. DC series motor with ponney brake for load test of dc series motor 14. DC shunt motor(1 HP) for speed control 15. Control Panel board consisting of Under voltage and Earth fault relay. 16. KCL,KVL trainer kit box 17. 3 phase control panel 18. 3 phase variac 19. 3 phase loading rheostat(10kVA,400 V) 20. Resistive load (220 V,6.5A) 21. LPF trainer 22. BPF trainer 23. K type(BRF) trainer 24. M derived filter 25. R-C,L-C trainer kit 26. Network theorem kit 27. DC regulated power supply (50V,5A) 28. Wattmeter single phase 29. Wattmeter 3-phase 30. House wiring exercise table ii) Electronics & Instrumentation Laboratory 31. Advance Trainer kit 32. CRO 33. Quadruple DC power supply 34. Analog cum Digital trainer kit 35. Rectifier trainer 36. Transistor trainer kit 37. Clipper & Clamper kit 38. Zener diode trainer kit 39. Digital to analog converter 40. 8-bit multiplying D to A converter 41. LVDT Bourdon tube trainer 42. LVDT inbuilt 4 kHz oscillator power supply. 43. Load cell Demonstrator 44. DC permanent magnet motor set for position control system 45. Function generator **Computer Laboratory** **Area: 52.2 m ^{2}** 1. HP Desktop 406 GT Mt with 18.5"TFT 2. HCL Infinity Global Server Line 17òTFT 3. HP 8300MT Desktop 4. HP DC 7900 Desktop 17òTFT

		5. External HDD 1 TB 6. Multimeter 7. D-link Wireless AC750 Dual band 8. Office Pro plus SNLG OLP NL Acd me (79P-05537) 9. win Pro-10 SNLG Upgrd OLPNL Acdme(FQC-09512) 10. Win Server (AL 2012 SNLG OLP NL Acdme DVLCAL(F18-04271|) 11. Win Server Std2012 SNLG OLP NL Acdme 2 Pro C(F73-06272) 12. 10 KVA Single online UPS, 12V 100AH, 16 Nos Excide Battery 13. 10 KVA Numeric online UPS with 12AHS Battery 14. 1 KVA UPS Microteck 15. DES 1024 D-Link 24 Port 16. 8 Port Switch TP Link 17. 24 Port Switch D-Link 18. Orpat Wall Fan 19. Battery Stand 20. HP LJ P1007 21. HP Printer LJP1606 22. HP Desktop Dx2280 with 15òTFT 23. Hardware Firewall 300ING, 3 years subscription 24. HP Scanner 7800 25. HP Scanjet G3010 Photot Scanner 26. 10 KVA Numeric online UPS with 12AHS Battery 27. 8 Port10/100 switch D-Link 28. Wireless AC750 Dual Band Router 29. Net WL Business Access Point 30. Netdbi Patch Panel Directional Antenna 31. Net WL Business Access 32. Net 8 Port SW/4 POE 33. Oth Spare Part 34. Net 9DBI Omni Antenna 35. Lightening/ Surge Arrestor **Physics Laboratory** **Area 95 m^2** 1. Apparatus to study dielectric constant 2. Apparatus to measure the value of specific charge (e/m) for electrons by helical method 3. Apparatus for determination of ultrasonic wave velocity in liquid medium 4. Apparatus for the study of Electro-magnetic induction (e.m.f Vs velocity) 5. Apparatus to determine low resistance (Carey-Foster method) 6. Apparatus to study variation of thermo e.m.f.of a copper constantan thermocouple with the temperature. 7. Apparatus for study of LCR circuit 8. Apparatus for determination of co-efficient of viscosity by Stokeôs law 9. Inerfaceable function generator and arbitrary waveform generator-1 10. Apparatus to find the frequency of a.c supply using

		electrical vibrator. 11. Apparatus for determination of energy band gap in semiconductor using p-n junction diode 12. Apparatus for finding energy band gap by four probe method 13. Apparatus for obtaining hysteresis curve(B-H curve) and determination of related magnetic quantities 14. Apparatus to study the variation of magnetic field with distance along the axis of a current carrying circular coil. 15. Apparatus for finding numerical aperture of an optical fiber 16. Apparatus to study fiber optic analog link 17. Apparatus to study fiber optic digital link 18. Digital Multimeter system -1 set (Two Nos.) 19. Digital storage Oscilloscope 20. Drill machine 21. Dual trace oscilloscope Make: Scientific25 MHz 22. Quadruple output d.c power supply Make: Microtech Industries 23. Digital multimeter Make: Metravi Model: 451 24. Function generator 25. Ammeter 0-500mA DC 26. Ammeter0-500mA AC 27. Rheostat 85 Ý, 2A 28. Rheostat 350 Ý, 2A 29. Voltmeter 0-30V DC

6.5.6.2 Research Contingency:

There is no specific head of Research contingency or no fund is provided as such for research contingency. The research activities of students under B. Tech, PG and PhD are funded from Recurring Contingency of College Fund. Adequate funds are available for meeting the recurring expenses incurred during the education programme.

6.5.7 Outcome/Output

6.5.7.1. Student Performance in National Examinations

Performance of the students during 2010 to 2020 is given in Table below

Particulars of students who qualified JRF/NET/ GATE (2015-2020)

Particulars	2015	2016	2017	2018	2019	2020
NET	-	-	-	-	01	
GATE	04	05	07	05	06	02
Ph.D.	-	-	01	03	01	
ICAR-JRF qualified	01	06	06	09	21	17
ICAR-JRF Received	-	-	-	01	-	01

ICAR-SRF	-	-	-	-	-	02

Performance of B. Tech (AE) students of CAEPHT, Sikkim in ICAR-JRF Examination 2020 and other PG entrance Examinations

Sl. No.	Name of the student	Stream	AIR	Category wise	UPS	M. Tech Admission	Mode of Admission
1.	Mr. Bharat Singh	AE	04	-	-	IIT, Mumbai	GATE
2.	Ms. Lalremmawii	AE	97	01 ST	01	PAU, Ludhiana	ICAR
3.	Ms. HamtoitiReang	AE	129	04 ST		G.B. Pant, Pantnagar	ICAR
4.	Ms. NajimaDebbarma	AE	182	06 ST	04	G.B. Pant, Pantnagar	ICAR
5.	Ms. Madhu	AE	48	18 OBC	-	BHU	BHU, PET
6.	Mr. TageTamo	AE	234	10 ST	10	NERIST, Itanagar	NERIST Entrance
7.	Ms. Laltangmawii	AE	237	12 ST		UAS, RAICHUR	ICAR
8.	Mr. Devi Charan Sharma	AE	194	-	07	CAEPHT, Sikkim	CAU Entrance
9.	Ms. Rima Das	AE	214	20 SC	09	RPCAU, Pusa, Bihar	ICAR
10.	Mr. Swapnajit Chowdhury	AE	335	-	12	BCKV, Mohanpur	ICAR
11.	Mr. C. Lalthlamuana	AE	452	15 ST		Mizoram University	Mizoram University Entrance
12.	Mr. Tapi Tada	AE	428	29 ST	14	NERIST, Itanagar	NERIST Entrance
13.	Ms. Naorem Nirmala Devi	AE	421	25 SC	--	NERIST, Itanagar	NERIST Entrance
14.	Mr. Arpan Rai	AE				CCSHAU, Hisar	ICAR
15	Biswajit Dey	AE				BHU	BHU, PET
16	Ms.NaoremNirmala Devi	AE				NERIST, Itanagar	NERIST Entrance

- Mr.Shivam Singh, B. Tech. AE selected for the campus Placement by the Mahindra and Mahindra Tractors Ltd. He also joined Indian Air Force through UPSC
- **The following students of Food technology have received fellowship/scholarship for higher education (M.Tech)**

Name of Degree programme	B. Tech. (Food Tech.)					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Actual student admitted	9	09	09	09	10	09
No. of Passed out student	5	7	9	6	5	10
Student received fellowship for M.Tech	2	-	5	1	2	3

6.5.7.2 Students Placement Profile:

Most of the students graduating from College of Horticulture are placed in academics/research institution for pursuing higher education in India and abroad. One Student qualified CAT Exam 2019 and got Admission in IRMA, Anand.

6.5.7.3 Awards/Recognitions/Certificates: Annexure **6.5.7.3**

6.5.7.4 Employability:

The students are acquainted with hands on practical related with various agricultural engineering activities related with Farm Power, Farm Machinery, Renewable Energy, and processing and value addition of various food products. lue Interactivesessionswithentrepreneursoftheregionarebeingheldtimetotime. This allows the students to start up an enterprise at their own level. The students are also furnished with knowledge both in theory and practical of agricultural engineering and allied activities. Robbarts Nongmaithem, the student of College of Agricultural Engineering and Post Harvest Technology is an entrepreneur who has been working as the MD and Founder of Agro Solutions Pvt Ltd from 2018 and MD of Mapu Foods, Imphal west, Manipur since 2019.

Training and Placement Cell, CAEPHT organized the online test conducted by the Mahindra & Mahindra Ltd., Mumbai for the campus placement of B. Tech. (AG) final year students on 05.11.2019. Total 25 students were appeared for the interview and 05 students were qualified for the Final Interview. Mahindra& Mahindra Ltd., Mumbai conducted the interview on 26.11.2019. Out of five students, Mr. Sivam Singh was selected for the post of Graduate Agriculture Trainee. The details are:-

Placement of pass out students in different positions/organizations during 2017-18

Sl. No.	Name of College	Name of student	Year of passing from college	Positions/Organizations joined
1.	CAEPHT, Gangtok	SajeshChetrri	M Tech 2017	Zydus
2.		T.B Marak	M Tech 2017	CG Foods, Guwahati
4.		Mr Santosh Taynath	Expected M Tech, 2018	Got offer from Zydus
5.		Mr Vishal Kumar	Expected B Tech (FT), 2018	Got offer from Zydus

Placement of pass out students in different positions/organizations during 2018-19

Sl. No.	Name of College	Name of student	Year of passing from college	Positions/Organizations joined
1.	CAEPHT, Gangtok	Mr. Abhijit Kumar	2018	Trainee Engineer in Mahindra & Mahindra Ltd., Mumbai
2.		Mr. Kumar Priyank	2018	Trainee Engineer in Mahindra & Mahindra Swarag Division

Placement of pass out students in different positions/organizations during 2019-20

Sl. No.	Name of College	Name of student	Year of passing from college	Organizations joined	Position/ joined as
1.	College of Agril. Engg. & PHT, Ranipool, Sikkim	1. Miss. Manisha Chettri	June 2019	C.G. Foods India Pvt. Ltd., Rangpo, Sikkim	Trainee Engineer (Quality Department)

Placement of pass out students in different positions/organizations during 2020

Sl. No.	Name of College	Name of student	Year of passing from college	Organizations joined	Position/ joined as
1.	College of Agril. Engg. & PHT, Ranipool, Sikkim	1. Mr. Sivam Singh	June 2020	Mahindra & Mahindra Ltd., Mumbai	Graduate Agriculture Trainee

6.5.8.

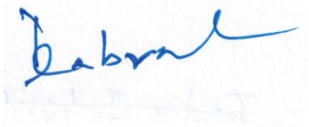
SSR for College along with Degree Programmes attached herewith.

SSR of the College must have the SSR of all its Degree Programmes (following section 6.4), then the report of the Colleges shall be considered.

6.5.9.

Certificate
(Applicable when SSR is submitted for Programmes & College)

I, **Parmendra Prasad Dabral**, the Dean **College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim** hereby certify that the information contained in Sections 6.4 and Section 6.5.1 to 6.5.7.4 are furnished as per the records available in the college and degree awarding university.



Signature of the Dean
of the college
With Date & Seal

6.5.10.

All SSR with respect to Programme as mentioned in 6.5.8 are submitted along herewith.

Annexure 6.5.2.3
Faculty Data and Credentials

The Dean, CAEPHT, Ranipool

SI. No.	Name and designation	Year of Joining Central Agricultural University	Year of Joining College	Highest qualification and Department	Year of Achieving highest qualification (In service/ Not)	Related work experience in the field	Experience in other areas
1	Prof. Parmendra Prasad Dabral DEAN	28-12-2017	28-12-2017	Ph.D.	1995	32 Years	32 years

Department of Basic Engineering and Applied Science

SI. No.	Name and designation	Year of Joining Central Agricultural University	Year of Joining College	Highest qualification and Department	Year of Achieving highest qualification (In service/ Not)	Related work experience in the field	Experience in other areas
1	Dr A. B. Sherpa, Assistant Professor (Sr. Scale) of Agronomy	2007 (1st September)	2007 (1st September)	Ph. D. in Agronomy	2008	13+ Years in Permanent position	Experience in Educational administration (additional responsibilities) as 1. Security In-charge, CAU-CAEPHT, Ranipool for more than 5 years. 2. Extension Officer in CAU-CAEPHT, Ranipool for more than 6 years and continue. 3. As Assistant Register (Academic), I/C, HoD, BEAS (BSH) Deptt. and Student

							Welfare Officer in CAU-CAEPHT during leave period of regular in-charge. 4. Presently looking after the In-charge HoD of BEAS Deptt., ATIC and Extension Officer of CAU-CAEPHT. Ranipool.
2	Dr Dhananjoy Roy, Assistant Professor (Sr. Scale) of English	2006 (October 3rd)	2006 (October 3rd)	Ph. D. in English (Humanities/ English)	2010 (In service)	14^{+} Years in Permanent position & 5^{+} years as Contractual/part-time faculty/ Research Fellow	Experience in Educational administration (additional responsibilities) as Assistant Registrar (Academic) in CAU-CAEPHT, Ranipool for more than 7 years; as Student Welfare Officer in CAU-CAEPHT for more than 1 year and as I/C, HoD, BEAS (BSH) Deptt. for more than 5 years.
3	Er.Nandita Sen Asst.Professor(Electrical Engg.)	01/11/2008	01/11/2008	M.Tech (Electrical Engg.)	2005,(Not in this service)	12 yrs 2 months	
4	Phuritshabam Robert, Assistant Professor, (Computer Science & Engineering) Currently Pursuing PhD.	11th April 2012	11th April 2012	M.Tech (Computer Science & Engineering)	2009(Not in Service)	8 years	8 years
5	Dr. Chakpram Birendrajit Assistant Professor (Soil Science)	12th April 2012	12th April 2012	Ph.D. (Soil Science) and Basic Engineering & Applied Science	2014 (In service)	Soil Fertility Management and Plant Nutrition; Biofortification of rice with zinc and iron	Pesticide Residue Analysis, Organic farming
6	Dr. Abujam Anuradha Devi, Assistant Professor (ABM)	07th , May, 2016	07th , May, 2016	Ph.D.(Agril. Econmics) /BEAS Dept.	2013	7 yrs one month	Teaching Associate at CoA, CAU, Imphal
7	Er. Rajiv Pradhan, Assistant Professor	27/05/2016	27/05/2016	M.Tech, Basic Engg.	2011 (In service)	4 years, 8 months	

	(Electronics Engineering & Instrumentation)			& Applied Sciences (BEAS)			
8	Dr. Srikanta Kumar Meher Assistant Professor (Mathematics)	2016	2016	PhD (Mathematics)	2012 (Not)	11 Years	NA
9	Smt.T. Loidang Chanu,Assistant Professor ,Statistics	17th Oct. 2016	17th Oct. 2016	M.Phil/BEAS Dept.	2009(Not inservice)	7yrs 6 months	
10	Dr. Sushma Gurumayum, Assistant Professor	24th November, 2017	24th November, 2017	Ph. D	2011 (not in service)	3 years	-
11	Dr. Ph. Baleshwor Sharma, Assistant Professor (Biochemistry)	22nd July 2019	22nd July 2019	Ph.D./BEAS Dept.	2016 (Not in service)	4 yrs 5 months	R&D

Department of Farm Machinery and Power Engineering

Sl. No	Name and Designation	Year of joining CAU, Imphal	Year of joining college	highest qualification and department	year of achieving highest qualification (In-service/Not)	related work experience in the field	experience in other area
1.	Dr. NS Chauhan	2008	2008	Ph.D	Not applicable	19 years	Nil
2	Dr. S N Yadav (Professor)	2007	2007	Ph. D. (Farm Machinery and Power Engineering)	2004	1. Extension activities of Agricultural Engineering as Technical Assistant, Technical Officer and Senior Technical Officer in **ICAR for about 24 years** including farm machinery production and workshop	Nil

						management and research coordination and management. Teaching of farm machinery courses at UG, PG and Ph.D. level as associate professor and Professor in **CAU for 14 years**	
3	Dr. S.K. Satpathy	2007	2007	Ph.D	2018	16 years	Nil
4	Shankar Swarup Das (Assistant Professor)	2008	2008	M. Tech. (Farm Machinery and Power Engineering)	2002	6 years in private engineering colleges (Oct. 2002-Oct-2008) and 12 years in CAU, Imphal (Oct 2008 to till date including 3 years study leave Jan 2016-Jan 2019)	--
5	Sujeet Kumar Chauhan (Assistant Professor)	2012	2012	M. Tech. (Farm Machinery and Power Engineering)	2006	**(i)** As Assistant Agril. Engineer (FMP) Under AICRP on Utilization of Animal Energy in Agriculture (UAE) 4 Years 0 Month 24 days (w.e.f 09/04/2012 to 03/05/2016) **(ii)** Working as Assistant professor w.e.f 04-05-2016 till continue	
6	Ngangkham Devarani (Assistant Professor)	2016	2016	Masters in Design and Manufacturing	2013 (Not in service)	6 months teaching experience in NIT Silchar	Nil

Department of Processing and Food Engineering

Sl. No.	Name and designation	Year of Joining CAU	Year of Joining college	Highest qualification and Department	Year of Achieving highest qualification (In service/Not)	Related work experience in the field	Experience in other areas
1.	Dr. R.P. Misra Professor	2015	2015	Ph.D (Engineering)	1986 (In service)	44 years	Research, Teaching, Extension, Coordination,

							Management and Administration
2.	Dr. Sujata Jena Associate Professor	2007	2007	Ph. D., Processing and Food Engineering	2006 (Not in service)	• Drying and storage of horticultural crops • Osmotic dehydration of fruits and vegetables • Value addition of agro-horticultural crops	• Administration and management • Extension activities
3.	Dr B K Singh Assistant Professor	2001	2011	Ph D (Aquacultural Engineering)	2010 (In service)	Fish Processing, Meat, Poultry and egg processing	Waste water treatment and Aquacultural Engineering
4	Dr. Said P. P. Assistant Professor	2016	2016	Ph. D. Department of Processing and Food Engineering	2014 (Not in service)	Processing of horticultural crops, Cereals and pulses	• Experience as a subject matter specialist for conducting agricultural extension activities, • Reviewing of International and National Standards like ISO and BIS Consultation to entrepreneurs on DPR and Food regulations
5.	Dr. Rakesh Kumar Raigar Assistant Professor (Dairy Engineering)	2017	2017	Ph D Processing and Food Engineering	2017 (Not in service)	Processing of milk and milk products Processing of oilseeds and underutilized pulses.	

Department of Soil and water conservation Engineering

S. No.	Name & Designation	Year of Joining Central Agricultural	Year of Joining College	Highest qualification and Department	Year of achieving highest qualification	Related work experience in the field	Experience in other areas

		University			(In service or not)		
1	Dr. Deepak Jhajharia, Professor	25th May, 2016	25th May, 2016	Ph.D.	2012 (QIP)	19 years 7 months	Nil
2	Dr. Jagabandhu Panda, Associate Professor	28.12.2001	24.08.2016	Ph.D.	2004 (not in service)	19 years	Nil
3	Dr. Santosh Rangrao Yadav, Assistant Professor (Senior Scale)	March 05, 2007	March 05, 2007	Ph. D. (Hydrology)	2010 (In service)	13 years 10 months	Nil
4	Dr. Ghanashyam Singh Yurembam, Assistant Professor	July 20, 2016	July 20, 2016	Ph. D.	2016 (Not in service)	4 years 6 months	Nil

Department of Irrigation and Drainage Engineering

S. No.	Name and Designation	Year of joining Central Agricultural University Imphal	Year of joining college	Highest qualification and department	Year of achieving highest qualification (in-service/ Not)	Related work experience in the field	Experience in other areas
1	Dr. B C Kusre, Professor	2010	2010	Ph.D. Irrigation and Drainage Engineering	2008 (In service)	Teaching research and extension	GIS and Remote sensing
2	Dr. Ajay Kumar Vashisht, Associate Professor	2010	2010	Ph.D. Irrigation and Drainage Engineering	2004 (Not in Service)	1. Management of water resources (both quantitatively and qualitatively) in the North-Eastern and North-Western Himalayan region. 2. Management of Brackish aquifers. 3. Well hydraulics 4. Design of water filtration systems depending upon the function.	Traditional agricultural practices

3	Dr.Ghanshyam T. Patle, Assistant Professor	2007	2007	Ph.D. Irrigation and Drainage Engineering	2014 (in service)	Irrigation water management, Micro irrigation design, Groundwater modelling, Crop water estimation, Stochastic modelling , Watershed Hydrology modelling, Climate variability studies	Climate change and water requirement, Carbon foot print estimation, Water quality analysis, Organic farming
4	Dr. Shivam, Assistant Professor	2019	2019	Ph.D. Irrigation and Drainage Engineering	2017 (Not in Service)	Water Resources Management	Climate change, Hydrological modelling, Extreme events analysis

Department of Renewable Energy Engineering

Sl. No.	Name and designation	Year of Joining Central Agricultural University	Year of Joining College	Highest qualification and Department	Year of Achieving highest qualification (In service/ Not)	Related work experience in the field	Experience in other areas
1.	Prof. Mahendra S. Seveda Professor and Head-REE	03-02-2010	03-20-2010	Ph.D. Renewable Energy Engineering	Not	**16 years** Actively engage in teaching of B. Tech. (Agricultural Engineering/Food Technology), M. Tech. & Ph. D. (Renewable Energy Engineering/ Farm Machinery & Power Engineering/Processing & Food Engineering/Irrigation & Drainage Engineering/Soil & Water Conservation Engineering), Research and Extension in the field of Agricultural Engineering and Renewable Energy Engineering.	Organized International/National: Workshop/Seminar/ Conference/Congress/Winter School: 07 (Last 05 Years)

						Accomplished many research projects on Biomass Energy, Solar Energy and Skill Development in Engineering and Technology sponsored by Petroleum Conservation Research Association (PCRA), Ministry of Petroleum and Natural Gas, Govt. of India and Indian Council of Agricultural Research (ICAR), Ministry of Agriculture and Farmersô Welfare, Govt. of India.	
2.	S M Kamaruzzaman Assistant Professor	5th October 2006	5th October 2006	M.Tech (Energy Science and Technology). (After completing M.Sc. (Physics))	2005 (Regular)	**16 Years** Completed two IRP on Solar Tunnel Dryer. Successfully Completed design and development of one 500 KG capacity Solar tunnel dryer for commercial use.	--
3.	Dr. Narale Pradip Digambar Assistant Professor	20th July 2019	20th July 2019	Ph.D. (Renewable Energy Engineering)	2017 (Regular)	**4 years** Expertise in the field of Biogas Technology and its Utilization, Bioenergy Engineering, Development of technologies for biomass to energy conversion. Development of solar dryers and green houses.	Experience in the field of Environmental Science & Waste Management Technologies, Rural Development and Agricultural Technologies.
4.	Dr. Kharpude Sudhir Narayan Assistant Professor	29th July 2019	29th July 2019	Ph.D. (Renewable Energy	2017 (Regular)	**4 years** Study on Renewable energy technologies like biogas,	Climate change, farm power, energy in agriculture and

				Engineering)		biomass and solar and their multi-criteria analysis through energy, embodied energy, emergy, anergy, exergy, economics, environmental analysis and LCA technique application. Expert system design and evaluation	organic farming, sustainable development

Annexure: 6.5.2.3
Teaching

Department of Basic Engineering and Applied Engineering

SI. No.	Name and designation	Institution	Details (UG/PG/Ph.D.) Courses	No. of Students Guided			Duration	Total experience
				B.Tech	M.Tech	Ph.D.		
1.	Dr A. B. Sherpa, Assistant Professor (Sr. Scale) of Agronomy	CAEPHT (Central Agricultural University, Imphal), Ranipool, Sikkim	UG Details of course taught is herewith (#) Teaching Courses for both CAEPHT, Ranipool, East Sikkim and COH, Bermiok, South Sikkim Details of course taught is herewith (#); Odd semester Agril. Science-I(AGS-111) BEAS-1114: Crop Production Technology 3 (2+1): 1st semester Food Technology BEAS-2102: Principles of Agronomy 3(2+1): 3rd semester Agricultural Engineering. FSC-212: Weed Management in Horticultural Crops 2(1+1): 3rd semester Horticulture SAF 311: Introductory Agro-forestry 2(1+1): 5th semester Horticulture NRM 314: Agro-meteorology and climate change 2(1+1): 5th semester Horticulture Even semester Agril. Science-II (AGS-121) Agribusiness Management & Trade (AGS-221) BEAS-1202: Environmental Science and Disaster Management 3(2+1): 2nd semester Agricultural Engineering. NRM-123: Introductory to Major Field Crops 2(1+1): 2nd semester Horticulture VSC-223: Precision Farming and Protected Cultivation 3 (2+1): 4th semester Horticulture	UG Student Project (03)	-	-	1st September 2007 till date	13 years

2	Dr Dhananjoy Roy, Assistant Professor (Sr. Scale) of English	CAEPHT (Central Agricultural University, Imphal), Ranipool, Sikkim	UG Professional English Entrp. Development and Communication Skills, Communication Skills and Personality Development, English Language, Women Safety and Gender Sensitization in Campuses PG/Ph.D. Technical Writing and Communication Skills Besides, different courses/topics of UG and PG levels of English(Hons) and PG/MA (English) as Part-time Lecturer and JRF/SRF (English) during March 2000 to September 2006				October 2006 till date March 2000 to September 2006	14 years 3 months in permanent position and 5 years as Part-time lecturer/ JRF/SRF (English)
3	Er.Nandita Sen, Asst. Professor(Electrical Engg.)	CAEPHT, Ranipool	UG Courses Offered 1.Electrical Circuit 2.Electrical Machine & Power UtilizationPFE-313 3.Instrumentation & Process Control 4.Principle of General Engg.	B.Tech	M.Tech	Ph.D.	12 yrs 2 months	12 yrs. 2 months

			5.Applied Electronics & Instrumentation 6.Electrical Engg.BEAS-1112 7. Computer Programming & Data Structure BEAS-1211 7.Electrical Machine & Power Utilization BEAS-2109 8. Computer programming & Data Structure BEAS-3201 PG Courses offered 1.Energy Management in Food Processing Industries PFE-505 2.Process Control System PFE-501					
4	Phuritshabam Robert Assistant Professor, (Computer Science & Engineering) Currently Pursuing PhD.	CAEPHT, CAU, Ranipool	UG				8 years	8 years
5	Dr. Chakpram Birendrajit Assistant Professor (Soil Science)	College of Agricultural Engineering and Post Harvest Technology, (C.A.U.) Ranipool, Gangtok, Sikkim	<u>UG Courses</u> BEAS 1103 ï Engineering Chemistry; BEAS 1104 ï Principles of Soil Science; BEAS 1115 ï Environmental Science & Disaster Management	-	--	--	April 2012 to till date	8 years 8 months
6	Dr. Abujam Anuradha Devi, Assistant Professor (ABM)	CAEPHT,CAU, Ranipool	Business Management and Trade- FBM 2201 (2+0) Project Preparation and Management- FBM 3201 (2+1) Entrepreneurship development and business management ï BEAS 1203 (2+1) Horti-business management-SSC 321 (2+0)	O7 (Seven)	NA	NA	4 year 6 months	4 year 6 months

			Entrepreneurship development- SSC 322 (1+1) Fundamentals of extension education- SSC 323 (1+1) Entrepreneurship Development (FBM 4102) -3(2+1) Marketing Management (FBM 3102)- 2(2+0) Economics and Marketing (SSC-111)- 3(2+1)					
7	Er. Rajiv Pradhan, Assistant Professor (Electronics Engineering & Instrumentation)	CAEPHT, Ranipool	UG and PG				4years, 8 months	4 years, 8 months
8	Dr. Srikanta Kumar Meher Assistant Professor (Mathematics)	CAEPHT, CAU, Sikkim	UG Courses Engineering Mathematics-I Engineering Mathematics-II Engineering Mathematics-III Elementary Statistics & Computer Application Statistics Computer Programming and Data Structure PG Course Mathematical Methods for Applied Sciences PhD Courses Optimization Techniques Mathematical Models in Food Processing Mathematical Methods for Applied Sciences	B. Tech NA	M. Tech NA	Ph.D. NA	2016-20	11 Years
9	Smt.T. Loidang Chanu,Assistant Professor ,Statistics	CAEPHT,CAU, Ranipool	UG: a)BSH-111[3(2+1)] b)BEAS-2111[2(1+1) c)BS-1207[3(2+1)] PG/PhD: a)STAT-511[4(3+1) b)STAT-531[3(2+1) c)STAT-512[2(1+1) d)FOR-537[2(1+1)] e)CAA-503(0+1) a) STAT-511[4(3+1) b STAT-531[3(2+1) c) CAA-503(0+1	1(year 2018)	2(Member), continuing	1(Member)continuing	4years, 4 months	4years, 4 months

10	Dr. Sushma Gurumayum, Assistant Professor	CAEPHT	FSQ2102 Credits 3 (2+1) Food Biotechnology (UG) FSQ1202 Credits 3(2+1) Food Microbiology (UG) BEAS 1117 Credits 3 (2+1) General Microbiology (UG) FSQ2101 Credits 3 (2+1) Food Microbiology. (UG) PGS502 Credits 3 (0+1) Basic Concepts in Laboratory Techniques (PG)	1 student; Co-guide of 1 student	Advisory member for 2 students	-	3 years	3 years
11	Dr. Ph. Baleshwor Sharma, Assistant Professor (Biochemistry)	CAEPHT, CAU, Ranipool	1. Food Chemistry of Micronutrients-FSQ 2102, 3(2+1) 2. Instrumental Techniques in Food Analysis-FSQ 3101, 3 (1+2) 3. Food Chemistry of Micronutrients-FSQ 1201, 3(2+1) 4. Food Biochemistry & Nutrition- FSQ2201, 3 (2+1) 5. Engineering Chemistry- BEAS 1103, 3 (2+1)	NA	NA	NA	1 year 5 months	1 year 5 months

Department of Farm Machinery and Power Engineering

Sr. No.	Name and designation	institution	Details of UG/PG/Ph.D courses	No. of students guided			duration	total experience
				B.Tech.	M.Tech.	Ph.D		
1.	Dr. NS Chauhan Professor	Professor CEAPHT (CAU), Ranipool, Sikkim	Machine Design, Tractor Systems and Controls, Human Engineering and Safety, Soil Mechanics in tillage and traction, Soil dynamics in tillage and traction, Ergonomics and Safety in Farm Operations, Farm Machinery Dynamics, Noise and Vibrations, System Simulation and Computer Aided Problem Solving in Engineering, Simulation Modeling in Farm Machinery & Power	6	2	-	24/12/2014 to Till date	6 Y 1 M

			Engineering, Computer Aided Analysis & Design of Farm Machinery					
2	Dr. S N Yadav (Professor)	CAU- College of Agricultural Engineering and Post-Harvest Technology, Ranipool	UG: 1. Farm Machinery and Equipment ï I 2. Farm Machinery and Equipment ï II 3. Farm Power and Machinery Management 4. Operation and Maintenance of Tractor and Farm Machinery 5. Workshop Technology 6. Experiential Learning PG: 1. Testing and Evaluation of Tractors and Farm Equipment 2. Design of Farm Power and Machinery Systems 3. Intellectual Property and its Management in Agriculture 4. Masterôs Seminar 5. Research Methodology 6. Mechanism analysis and synthesis 7. Special problem Ph.D. 1. Advances in farm	11	04 (03 completed and 01is ongoing)	02 (Ongoing)	2007 to 2021	14 years

			machinery and power engineering 2. Machinery for natural resource management and precision farming 3. Doctoral seminar I 4. Doctoral seminar II 5. Special problem 6. Case study Intellectual Property and its Management in Agriculture					
3	Dr. S.K. Satpathy,	CEAPHT (CAU), Ranipool, Sikkim	Farm Machinery and equipment, Operation and maintenance of farm machinery, soil dynamics in tillage and traction, Opaerion research in farm machinery and power management, Testing of agricultural equipments, advances in farm machinery and power engineering,	11	01	-	24/08/2007 till date	13 Y 4 M
4	Shankar Swarup Das (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	Workshop Technology, Thermodynamics and Heat Engines, Engineering Drawing, Heat and Mass Transfer, Refrigeration and Air-conditioning, Machine drawing and Computer Graphics, Theory of Machines, Machine Design, Mechanical Vibrations, Computer Aided Analysis and Design of Farm Machines	6	0	0	6 years (Pvt. colleges), 12 years (CAU, Imphal)	18 years

5	Sujeet Kumar Chauhan (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	U.G: (i) Farm Power (2012-13, 2013-14, 2014-15, 2015-16) (ii) Operation and Maintenance of Tractor and Farm Machinery-I (2012-13, 2013-14, 2016-15, 2017-18,2018-19) (iii) Operation and Maintenance of Tractor and Farm Machinery-II (2014-15, 2015-16,2016-17, 2017-18,2018-19) (iv) Workshop Technology and practices (2016-17, 2017-18, 2018-19) (v) Theory of machine (2016-17) (vi) Institutional Experiential Learning (2016-17, 2017-18) (vii) Tractor and Automotive engines (2017-18) (viii) Tractor systems and Control (2017-18, 2018-19, 2019-20) (ix) Farm Power and Machinery (2018-19) (x) Tractor and Farm Machinery operation and maintenance (2019-20) (xi) Mechanics of Tillage and Traction (2019-20, 2020-21)	10	0	0	09/04/2012 to till continue	9 years

			PG (M.Tech) (i) Testing & Evaluation of Tractors and Farm Machines (2017-18, 2018-19) (ii)Tractor Design (2019-20, 2020-21) (iii) Design of Farm Power and Machinery System (2019-20)					
6	Ngangkham Devarani (Assistant Professor)	College of Agricultural Engineering and PHT, Ranipool	Heat and Mass transfer Thermodynamics Refrigeration and Air-conditioning Food thermodynamics AutoCAD applications Machine drawing Engineering drawing Theory of machine Refrigeration and Air-conditioning Research Methodology System simulation and Computer aided problem solving in Engineering Simulation Modelling on Farm Machinery and Power Engineering Mechanical Vibrations Mechanism analysis and synthesis Dimensional Experiential learning	3	0	0	4 Years	4 Years

Department of Processing and Food Engineering

Sl. No.	Name and designation	Institution	Details (UG/PG/Ph.D. Courses)	No. of students Guided			Duration	Total experience
				B. Tech	M. Tech	Ph. D		
1.	Dr. R. P. Misra Professor	IARI, CARI, CAEPHT(CAU)	UG, PG and Ph.D	5	-	-	i) 1976-86 ii) 1986-89 iii) 2015-20	18 years
2.	Dr. Sujata Jena Associate Professor	CAEPHT (CAU), Ranipool	UG courses • Dairy and Food Engineering • Drying and Storage Engineering • Processing technology of fruits and vegetables • Food storage engineering • Processing of milk and milk products • Processing technology of beverages • Post Harvest Engineering	32	04 (02 continuing)	01 (Continuing)	2007-2021	

			• Unit operations in Food Engineering • Downstream processing • Refrigeration and Air Conditioning • Food process equipment design • Food Science and Nutrition • Food plant design and layout • Waste and by-product Utilization PG and PhD courses • Unit operations in Food Process Engineering • Advances in Food Processing • Transport Phenomena in Food processing • Advanced Food Process Engineering • Mathematical modelling in Food Processing • Advances in drying of Food Materials • Library sciences and information • Basic concepts in laboratory techniques				2007 - till date	13 years
3.	Dr B K Singh Assistant Professor	COF Agartala	• Fish Farm and Harbour Engineering • Marine Engines and				2001 to 2011	10 years

			Propulsion System • Refrigeration And Equipment Engineering • Fishing Craft Technology • Seamanship and Navigation • Fishing Gear Technology					
		CAEPHT (CAU), Ranipool	• Design and Maintenance of Greenhouse • Extrusion Technology • Live Stock Product Processing • Advances in Meat, Poultry and Fishery Technology • Society and technology • Unit Operations in Food Processing I • Development of processed product and equipment • Processing of meat and poultry products • Processing of Fish and Marine Products • Unit Operations in Food Processing II • Processing of meat and poultry products • Food Processing Equipment-I • Meat Processing • Refrigeration and Air conditioning • Food Refrigeration and	33	03 (01 continuing)	02 (continuing)	2011 to till date	9 years

			Cold Chain • Textural and Rheological characteristics of Food Material • Food Production Trends and Programmes • Fundamentals of Food Processing • Engineering Properties of Agricultural Produce • Agricultural waste and by product Utilization • Food Plant Sanitation					
4	Dr Said P P Assistant Professor	CAEPHT, Ranipool	• Post harvest engineering of horticultural crops (PFE 3201) • Project (AGE 411) • Experiential learning (AGE 421) • 10- weeks Experiential Learning On campus (Student • READY) (AGE ï 4102) • Project Planning and Report Writing (Student READY) (AGE ï 4201) • Techniques in food analysis (FT 312) • Waste and Byproduct utilization (FT 314) • Product Development and Formulations (FT 322) • Food Plant Design and Layout (FT 325)	11	02	-	2016-till date	04 Year

			• Research project (FT- 328) • Experiential learning (FT ï 411) • Processing Technology of Liquid Milk (FPT 2102) • Unit operations in food processing ï I (FPE ï 2102) • Unit operation in food processing ï II (FPE 2201) • Food Chemistry of Micronutrients, • Instrumental techniques in food analysis (FSQ ï 3101), • Bakery, confectionery and snack products (FPT ï 3103) • Food Additives & Preservatives (FSQ ï 3202), • Sensory evaluation of food products (FPT ï 3204), • Student READY - Experiential learning programme ï II (FT ï 4102), • Student READY - Research project (FT ï 4103) • Food quality and safety engineering (PFE ï 511), • MastersôResearch (PFE ï 599), • Basic Concept in Laboratory Techniques (PGS 504) • Textural and rheological characteristics of food material (PFE 601)					

			• Agricultural Waste and byproduct utilization (PFE ï 605) • Post harvest management of horticultural crops (PHM 311) • Post harvest processing of horticultural crops (PHM 322/ PHM321), • Processing and value addition of horticultural crops (READY ï 425) • Processing of fruits and vegetables for value addition (READY ï 423)					
5.	Dr. Rakesh Kumar Raigar Assistant Professor (Dairy Engineering)	CAEPHT, CAU	UG Courses B.Tech (A.E) • Dairy and Food Engineering • Food Packaging Technology B. Tech. (FT) • Food Process Equipment Design • Processing Technology of Liquid Milk • Food Process Equipment Design • Processing Technology of Liquid Milk • Food Packaging Technology & Equipment • Speciality Foods • Food Quality Assurance & Certification • AGE-411 (Research Project) AGE ï 4102 (Student	07	02 (continuing)	-	2017 to till date	03 years

			READY ï Experiential learning programme ï II), • AGE ï 4201 (Student READY - Research project ï II) • FT ï 4102 (Student READY - Experiential learning programme ï II), FT ï 4103 (Student READY - Research project), M.Tech. PFE • Food Packaging Technology • Transport phenomena in food processing			

Department of Soil and Water Conservation Engineering

Sl. No.	Name and Designation	Institution	Details (UG/PG/PhD) Courses	No. of students Guided	Duration	Total Experience
1	Dr. Deepak Jhajharia, Professor	CAEPHT	<u>UG Courses:</u> (1) Engineering Mechanics (BEAS-1106) (2) Strength of Materials (SWE-223 / BEAS-1205) (3) Watershed Hydrology (SWCE-2201) (4) Reservoir and Farm Pond Design (SWE-417) (5) Plastic Applications in Agriculture (SWCE4205) (6) Water Management in Horticulture Crops (NRM-122) <u>PG Courses:</u> (1) Water Resources System Engineering (SWE-510) (2) Dams and Reservoir Operations (CE-502) (3) Soil & Water Conservation Engg. (SWE-505) (4) Watershed Hydrology (SWE-501) <u>Ph. D. Courses:</u> (1) Dams and Reservoir Operations (CE502) (2) Advanced Hydrology (SWE-601)	B. Tech - 04 M. Tech - 06	2015-2020	19 years 7 months

			(3) Advanced Hydromechanics in soil aquifer system (SWE604)					
2	Dr. Jagabandhu Panda, Associate Professor	CAEPHT	BEAS-1204:Fluid Mechanics & Open Channel Hydraulics (UG) BEAS-2106: Design of Structures (UG) SWCE-3201:Water Harvesting and soil conservation structures (UG) SWCE-4201:Remote Sensing & GIS Applications (UG) CE-501: Open Channel Hydraulics (PG) SWCE-505 Soil and Water Conservation Engineering (PG) SWE-603:Modelling Soil Erosion Process (PhD) CE-603:Design of Bins and Silos (PhD)	B. Tech 10	M. Tech 2 completed 2 ongoing	Ph. D. N.A.	19 years	19 years
3	Dr. Santosh Rangrao Yadav		<u>UG Courses:</u> (1) Surveying and Levelling (SWE-121/ BEAS-1206); (2) Watershed Hydrology (SWE-212/ SWCE-2201); (3) Soil and Water Conservation Engg. (SWE-222/ SWCE-3101); (4) Engineering Drawing (SWE-111 & FT-112); (5) Remote Sensing and GIS Applications (SWE-416); (6) Soil Mechanics (SWE-211/ BEAS-2105); (7) Gully and Ravine Control Structures (SWE-415) <u>PG Courses:</u> (1) GIS and RS for Land and Water Resource Management (SWE-511); (2) Dams and Reservoir Operations (CE-502); (3) Soil & Water Conservation Engg. (SWE-502); (4) Watershed Hydrology (SWE-505); (5) Computer Applications in Agriculture (CAA-503) <u>Ph. D. Courses:</u>	B. Tech. 09		05 years (2015-20)	13 years 10 months	

			(1) Soil & Water Systems Simulation & Modelling (SWE-602); (2) Dams and Reservoir Operations (CE-502); (3) Computer Applications in Agriculture (CAA-503)					
4	Dr. Ghanashyam Singh Yurembam, Assistant Professor	CAEPHT	BEAS 1107: Engineering Drawing(UG) BEAS 1111: Engineering Drawing & Graphics(UG) SWCE 3102: Watershed Planning & Management (UG) FPE 1202: Fluid Mechanics (UG) BEAS 2201: Building Construction and Cost Estimation (UG)	B.Tech	M.Tech	Ph.D		
				4 students	2 Ongoing	N.A.	4.5 years	4.5 years
			CE-503: Water quality & Pollution Control (PG) SWE 503:Agricultural Drainage system (PG)					
			Plant growth modelling and simulation (SWE 606) (Ph.D.)					

Department of Irrigation and Drainage Engineering

S. No.	Name and Designation	Institution	Details of (UG/ PG/ Ph.D.) courses	No. of students guided			Duration	Total Experience
				B. Tech.	M. Tech.	Ph.D.		
1	Dr. B C Kusre Professor	CAEPHT Ranipool	PG Design of Surface Irrigation System Seminar Disaster Management UG Irrigation Engineering Micro Irrigation System Design (Elective) Engineering Mechanics Experiential Learning B. Tech. Project Water Management in Horticultural Crops	7	2	-	2015-2020	17
2	Dr. Ajay Kumar	CAEPHT	PG	4	1	-	2015-	14

	Vashisht, Associate Professor	Ranipool	Design of Pumps for Irrigation and Drainage (IDE506) Groundwater Engineering (IDE504) Agricultural Drainage Systems (IDE503) Water Quality and Pollution Control (IDE514) UG Groundwater, Wells and Pumps (IDE3201) Drainage Engineering (IDE3101) Agricultural Structures and Environmental Control (PFE3101) Fluid Mechanics (FPE1202) B. Tech. Project Experiential Learning				2020	
3	Dr. Ghanshyam T. Patle, Assistant Professor	CAEPHT, Ranipool	PG/ PHD Land Grading and Earth Moving Machinery (SWE 513) Watershed management and modelling (SWE 512) Dams and Reservoir Operations (CE 502) Agricultural Drainage Systems (SWE 513) Probabilistic Approach in Design (CE 601) Control of Pollution from Solid Wastes (CE 507) Water Quality and Pollution Control (IDE 514) Probabilistic Approach in Design (CE 501) Water Quality and Pollution Control (IDE 514) UG Engineering Mechanics (SWE 122) Agricultural Structures and Environmental Control (PFE 321) Soil Mechanics (SWE 211) Watershed Management & Planning (SWE 412) Surveying and Levelling (SWE 121) Drainage Engineering (SWE 321) Environmental Engineering (SWE 414) Sprinkler and Micro Irrigation Systems (IDE 2202) Minor Irrigation and Command Area Development (IDE 4202)	8	-	-	2015-2020	13 years 08 months

			Agricultural Structures and Environmental Control (PFE 3101)					
4	Dr. Shivam, Assistant Professor	CAEPHT, Ranipool	PG- Open Channel Flow (IDE501) Introductory Hydro-informatics (IDE511) UG-Drainage Engineering (IDE3201) Management of Canal Irrigation (IDE4201) Groundwater Wells and Pumps (IDE3101).	1	Nil	Nil	1 year 5 Months	1 year 5 Months

Department of Renewable Energy Engineering

Sl. No.	Name and designation	Institution	Details (UG/PG/Ph.D.) Courses	No. of Students Guided			Duration	Total experience
				B.Tech	M.Tech	Ph.D.		
1.	Prof. Mahendra S. Seveda Professor and Head-REE	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	1. Fundamentals of Renewable Energy Sources (REE-2201), 3(2+1) 2. Renewable Energy Technology (FPM-414), 3 (2+1) 3. Renewable Power Sources (REE-3101), 3(2+1) 4. Bio-energy Systems: Design and Applications (REE-3201), 3(2+1) 5. Agricultural Research, Research Ethics and Rural Development Programme (PGS-505), 1(1+0) 6. Photovoltaic Technology and Systems (REE-4201), 3(2+1) 7. Direct Energy Conversion Technologies (REE-515), 3(2+1) 8. Masterôs Seminar (REE-	08	09	02 Pursuing (guiding as Advisory Committee Member)	2015-16 to 2019-20	Total Teaching Experience is 16 years

			591), 1(0+1) 9. Masterôs Research Project (REE-599), 20(0+20) 10. Solar Energy Utilization (REE-501), 3(2+1) 11. Bio energy Conversion and Processing of Wastes (REE-502), 3(2+1) 12. Agro Energy Audit and Management (REE-507), 3(2+1) 13. Wind Energy Utilization (REE-508), 3(3+0) 14. B. Tech. Research Project (AGE-4202), 10(0+10) 15. Design and Analysis of Renewable Energy Conversion Systems (REE-510), 3(3+0) 16. Renewable Energy Sources (FPM-222/FT-226), 3(2+1) 17. Thermodynamics and Heat Engine (FPM-122), 3(2+1) 18. Renewable Energy Technology (FPM-414), 3(2+1) 19. Workshop Technology (FPM-121), 3(2+1) 20. Case Study (FMPE-694), 2(0+2)					
2.	S M Kamaruzzaman Assistant Professor	College of Agricultural Engineering & Post Harvest Technology,	Engineering Physics BSH 111 Engineering Mathematics III BSH 211 Electrical Circuit PFE 111 Principle of General Engineering	8 Thesis (8 Students)	-- --	-- --	October 2006 to Till date	14 Years and 3 months

		Ranipool, Gangtok.	FT 114(shared) Applied Electronics & Instrumentation PFE 122 Instrumentation & Process control FT317 Environmental Sc& Disaster Management BEAS 1202 (Shared) Materials and devices for energy applications REE509					
3.	Dr. Narale Pradip Digambar Assistant Professor	College of Agricultural Engineering, Birsa Agricultural University, Ranchi, Jharkhand.	UG Courses: Renewable Energy (AE-322), Environment Science and Disaster Management (BEAS 122). PG Courses: Design and analysis of renewable energy conversion systems (FMP-513).	--	--	--	4 December 2019 ï 19 July 2019	7 months and 15 days.
		College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	UG Courses: Renewable Power Sources (REE-3101), Bio-Energy Systems: Design and Applications (REE 3201), Waste and By-Products Utilization (REE 4202). PG Courses: Agro-Energy Audit and Management (REE-507), Design and Analysis of Renewable Energy Conservation System (REE 510), Biogas Technology and Mechanism (REE 503), Energy Ecology & Environment (RES 513).	2	--	--	20 July 2019- Till date	1 Year and 7 months
4.	Dr. Kharpude Sudhir Narayan	Dadasaheb	REE-111 (Engineering	5 Thesis	--	--	January	2 Years

	Assistant Professor	Mokashi CAE&T, Rajmachi, Maharashtra (affiliated MPKV Rahuri)	Chemistry) REE 122 (Electrical Machines and Power Utilization) REE-243 (Fundamentals of Renewable Energy Sources) REE-354 (Renewable Power Sources) REE-365 (Bio-energy Systems: Design and applications) FS-355 (Agricultural Structures, Storage Engineering and Environmental Control) DEG-111 (Democracy, Elections and Good Governance)	(9 Students)			2017 ï July 2019	and 6 months
		College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	FPM 414, REE 4201, REE-4202, REE- 502, REE-504, REE-507, REE-2201, AGE-4102, AGE-4101	1	--	--	July 2019- Till date	1 Year and 7 months

Annexure 6.5.2.3
Part: Extension

Department of Basic Engineering and Applied Science

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
1.	Dr A. B. Sherpa, Assistant Professor (Sr. Scale) of Agronomy & Extension Officer	CAEPHT (Central Agricultural University, Imphal), Ranipool, Sikkim	All types of college extension education activities Including training (formal and informal), Participated in the Exhibition cum Mela, Agri-Fair of CAU every year, State & ICAR Agril. Fair/Mela. Conducted different farmers interaction and Kishan Ghosti at college and university level.	Since last 5years and continue	
2	Dr Dhananjoy Roy, Assistant Professor (Sr. Scale) of English	Nil	Nil	Nil	
3	Er.Nandita Sen Asst.Professor (Electrical Engg.)	Nil	Nil	Nil	
4	Phuritshabam Robert, Assistant Professor, (Computer Science & Engineering) Currently Pursuing PhD.	Nil	Nil	Nil	
5	Dr. Chakpram Birendrajit Assistant Professor (Soil Science)	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	1. Organized one day awareness programme on importance of soil health management on World Soil Day on 5th December from 2015-2020 2. Soil Health Card Distribution on World Soil Day on 5th December from 2015-2020 3. Delivered lecture entitled ñSoil Testing and its importance in organic agriculture/ horticulture in NEH regionò as a Resource Person at the Training Programme on ñIntegrated farming system for improved livelihood on Hillsò during September 24-26th, 2014 4. Delivered lecture entitled ñNutrient Management in selected crops of Sikkimò as a Resource Person at the Training Programme on ñEngineer Interventions for Sustainable Crop Production and Post Harvest Management for NEH Regionò during March 10-14, 2015	From 2014 to 2020	

6	Dr. Abujam Anuradha Devi, Assistant Professor (ABM) and Co.PI	CAEPHT,CAU, Ranipool	• Attended and presented a research paper entitle ñTrend analysis of organic produce and study of constraints in the marketing of organic produce in Sikkimò at Multidisciplinary International Conference on ñA Perspective of Global Research Process: Present Scenario and Future Challengesò on 19th to 20th January, 2019 at Manipur University, Manipur, Imphal • Attended 15-Days Training program on ñOrganic Farming for SRLM Krishi Sakhis of Rural Management and Development Department, Govt. of Sikkim during July 22 to August 05, 2019 as a Resource Person to deliver talk on ñAgribusiness Opportunities in Organics and Marketing strategies for Organic productsò on 5th August, 2019 at ICAR-National Organic Farming Research Institute, Tadong, Gangtok. • ICAR Sponsored 21 days Summer School on ñAgricultural Education, Entrepreneurship and Skill Development in Indiaò, from 27th August to 16th September, 2019 (21 days) organized by Directorate of Instruction, Central Agricultural University (CAU), Imphal, Manipur. • Attended and delivered lecture on ñSecondary Agriculture: Scope for Income enhancement of Marginal Farmersò during Three (03) days CCS NIAM, Jaipur (Rajasthan) sponsored training programme on ñClimate change risk mitigation for marginal farmers of Himalayan Regional in Sikkimò during 26th-28th, September, 2019. • Attended and Presented paper entitle ñ Horti-Business Opportunities for livelihood security in Sikkimò in Regional Seminar of The Indian Society of Agricultural Economics (ISAE) on ñPerspectives of Horti-Business Development in North East Regionò during 24-25 February, 2020, organized by College of Horticulture & Forestry, CAU, Pasighat, co-organized by NABARD-Itanagar & in association with ICAR-ATARI, Guwahati and Rajiv Gandhi University, Itanagar. • Attended and Participated ñState Credit Seminar for district wise Potential Linked Credit Plans (PLPs)ò organized by NABARD,	2019-20	

			Sikkim Regional Office, Gangtok-737101 on 3rd March, 2020 at Summit Denzong, Conference Hall, Kazi Road, Gangtok. • Attended and delivered lecture as Resource Person during Three days online Skill development Training on ñValue Chain Developmentò organized by CAEPHT, CAU (I), Ranipool, sponsored by IDP-NAHEP Project during 20th to 22nd July, 2020 • Attended and delivered lecture as Resource Person during Two days online Skill development Training on ñGender Analysis Skills for Agriculture and Allied Sectorsò organized by CAEPHT, CAU (I), Ranipool, sponsored by IDP-NAHEP Project 7during 4th and 5th December, 2020 on the following topics:		
7	Er. Rajiv Pradhan, Assistant Professor (Electronics Engineering & Instrumentation)	Nil	Nil	Nil	Nil
8	Dr. Srikanta Kumar Meher Assistant Professor (Mathematics)	CAEPHT, CAU, Sikkim	Nil	Nil	Nil
9	Smt.T. Loidang Chanu,Assistant Professor ,Statistics	CAEPHT,CAU, Ranipool	Nil	Nil	Nil
10	**Dr. Sushma Gurumayum, Assistant Professor**	**CAEPHT**	Delivered lecture on ñMushroom cultivationò during three months Skill Development Programme on Low Cost Green House Technology in North East Hill Region, at CAEPHT, Ranipool	Sept 17-Dec 15, 2018.	**Resource person**
			One Day Workshop for sensitization on ñEstablishment of Agriclinics and Agri-business Centreò on 4th February, 2019 held at CAEPHT, Ranipool.	4th February, 2019	**Co-Coordinator**
			Hands on Training on Techniques in Microbial Analysis of Foods 18/03/19 - 20/03/19 organized by Department of Processing and Food Engineering, CAEPHT, Ranipool (Training organized under Biotech Hub)	18/03/19 - 20/03/19	**Resource Person**

			Hands on Training on Techniques in Microbial Analysis of Foods 23/03/18 - 26/03/18 organized by Department of Processing and Food Engineering, CAEPHT, Ranipool (Training organized under Biotech Hub)	23/03/18 - 26/03/18	**Resource Person**
			3 days training on ñIntensive Dairy Farming and Energy Managementò from 19th to 21st September 2019, sponsored by CCS-NIAM Jaipur, Rajasthan for the farmers and unemployed youth.	19th to 21st September 2019	**Resource Person**
11	Dr. Ph. Baleshwor Sharma, Assistant Professor (Biochemistry)	CAEPHT, CAU, Ranipool	Nil	Nil	Nil

Department of Farm Machinery and Power Engineering

Sr. No.	Name and designation	institution	Details of work done	duration	Remark
1.	Dr. NS Chauhan Professor	CEAPHT (CAU), Ranipool, Sikkim	• Demonstration and training to farmers on gender-friendly hand tools improved tolls and equipment for mechanization of hill agriculture • Delivered more than 15 invited lectures in training programmes organized by different organizations in Sikkim	24/12/2014 to till date	
2.	Dr. S N Yadav Professor	CAU-CAEPHT Ranipool	1. Organization of short duration training programme on different aspects of hill farming mechanization ï **12 courses** **2.** FLD on ergonomically designed and women friendly equipment **- 5 Nos.** 3. Three months vocational training on ñManufacturing Technology and Custom Hire Services of Agricultural Equipment for Self-Employmentò **- 2 Nos** 4. North-East Agri fair. Organized by CAU, Imphal at Pasighat, Imphal, Tura and Sikkim **– 4 Nos.** • Technology and Machinery Demonstration mela **- 4**	-	-
3.	Dr. S.K. Satpathy,	CEAPHT	• Demonstration and training to farmers on improved tolls and	24/08/2007	

	Asst. Professor	(CAU), Ranipool, Sikkim	equipment for mechanization of hill agriculture • skill development training of unemployed youth in the job role of tractor operator skill development training of unemployed youth in manufacturing of farm tools and equipment	to till date	
4.	Shankar Swarup Das (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	Nil	Nil	Nil
5.	Sujeet Kumar Chauhan (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	• THIRTY (30) number training/awareness/filed day on/off campus to farmers were conducted Eighty FLD of improved animal drawn implement were conducted on farmers field	2012-2021	1200 farmers familiarized with Improved Animal drawn implements and convinced for use their use and 1400 farmers familiarized with Improved Animal drawn implements during FLD programme
6.	Ngangkham Devarani (Assistant Professor)	Nil	Nil	Nil	Nil

Department of Processing and Food Engineering

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
1.	Dr. R.P. Misra, Professor	IARI, CARI, CIRG, ICAR HQ and CAEPHT	i) Farmers and entrepreneurs training programme ii) Survey works, Kisan Mela and Workshop iii) Coordinated, world bank/GEF funded three sustainability projects at NAIP	1976-2020 (44 years)	
2.	Dr. Sujata Jena	CAEPHT,	• Acted as resource person in a DST funded training program on	2007-tilldate	•

	Associate Professor	Ranipool	ñTechnology based Entrepreneurship development programmeò organized during 12.02.09-20.02.09 by Sikkim Consultancy Centre, Gangtok at Ranipool,Sikkim. • Acted as resource person on ñNutritional Significance of Fruits, Food Spoilage and need for Fruit preservation, Different Methods of Fruit Preservation and their Principlesò in a training programme organized during 15.04.08 ï 19.04.08 by IGNOU at SIRD, Jorethang, Sikkim. • Member of various committees for organizing Agricultural fair (01-03.12.08) and Farmersô day (25-26.05.08). • Served as resource person in a model training on ñAdvances in post harvest technology for spices and medicinal plantsò organized during 15.02.10 ï 22.02.10 by CAEPHT (CAU), Ranipool, Gangtok and funded by Directorate of Extension, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India. • Acted as resource person in a Farmersô training programme on ñStorage grain pest and managementò, 25.03.10 at ICAR, NEH region, Tadong, Gangtok • Organization of farmers and delegates in CAU NE Agri Fair -2014 in the capacity of Chairman, Registration committee • Organized Training cum Demonstration on ñEssential Oil Extraction from Aromatic Plants using Field Distillation Unitò on 26.07.14 • Acted as resource person and delivered lecture on ñOn-farm post harvest management techniques of selected fruits and vegetables of NEH regionò during training on 14th March, 2015. • Conducted six days training on ñProcessing and value addition of horticultural crops of NEH regionò during 14-03-2016 to 19-03-2016 sponsored by Sub Mission on Agricultural Mechanization (SMAM), Department of Food Security and Agriculture Development, Government of Sikkim, Gangtok. • Conducted a two days training cum demonstration program on ñProcessing equipment and value added horticultural & bakery productsò as course director at CAEPHT during 24.03.17-25.03.17. • Acted as resource person and delivered a lecture on ñProcess technology for value addition of horticultural cropsò on 06.09.16 at CAEPHT in a training program funded by Directorate of Agriculture and Food		

			Production, Govt. of Odisha • Conducted one day demonstration program on ñMachineries for processing of horticultural and bakery productsò under 'Jai Kisan Jai Vigyan' Week on 24.12.16. • Conducted a three days training cum demonstration program on ñBakery and processing machineries for horticultural and spice cropsò as course coordinator at CAEPHT during 12.03.18-14.03.18 funded by Department of Food Security and Agriculture Development, Government of Sikkim, Gangtok • Conducted a five days Skill development training on ñProcessing and value addition of horticultural cropsò as course coordinator at CAEPHT during 19.03.18-23.03.18 funded by SSB, Geyzing • Acted as resource person and delivered a lecture on ñPost harvest management of horticultural crops in organic production systemò on 30.05.17 at NOFRI, Tadong in a training program conducted by ICAR-National Organic Farming Research Institute, Tadong, Gangtok. • Conducted a five days training cum demonstration program on ñHorticultural produce processing machines and bakery productsò as course coordinator at CAEPHT during 21.05.18-25.05.18 funded by Department of Food Security and Agriculture Development, Government of Sikkim, Gangtok • Conducted a 90 days Skill development training on ñPost harvest Processing of Horticultural Cropsò as course director at CAEPHT during 26.11.18-23.02.19 funded by Power Finance Corporation Ltd., New Delhi. • Acted as resource person and delivered a lecture on ñPost harvest management of horticultural crops in organic production systemò on 26.07.18 at NOFRI, Tadong. • Acted as resource person and delivered a lecture on ñTechnology for value added products from fruits and vegetablesò on 30.08.18 in a training program conducted by SAMETI, FS&ADD, Govt. of Sikkim, Tadong. • Acted as resource person and delivered a lecture on ñPost harvest management of horticultural cropsò on 03.05.19 at NOFRI, Tadong in a training program for newly recruited development officers conducted by		

			ICAR-National Organic Farming Research Institute, Tadong, Gangtok. • Facilitated Technology and Machinery Demonstration Mela as a Member, Organizing committee • Interacted with Farmers/villagers of Martham, Sikkim under Mera Gaon Mera Gaurav program to make them aware of various schemes of Govt of India for their upliftment and increase in income. • Acted as resource person during training on ñPost harvest management of horticultural crops in organic production systemò on 03.08.19, ICAR-NOFRI, Tadong, Gangtok.		
3.	Dr B.K singh		• As resource person in various training programme on followings: Å Design and construction of fish farm and hatchery Å Fish feed formulation and manufacturing Å Fish processing and product development Å Advances in food processing Å Water quality management in fish farm and hatchery Å Application of plastic in aquaculture and fisheries	10 years	•
4.	Dr. Said Prashant Pandharinath Assistant Professor (Food Technology)	CAU, Imphal	• Demonstration of Horticultural Produce processing machines and bakery products at Farmersô Produce Processing-cum-Skill Development Center • Skill Development Training on Processing and Value Addition of Horticultural crops (Course Coordinator) • 90 days skill development training programme on ñPost harvest Processing of Horticultural Cropsò • Skill Development Training on Processing and Value Addition of Horticultural crops funded under Civic Action Programme, 36th Bn. SSB, Geyzing • Successfully co-ordinated, Farmers visits (on and off campus) • Training and Demonstrations of Horticultural produce processing machines and bakery products for Women of SSB officials • Delivered following lectures at different summer/winter training/ skill development and EDP programs/TED talks, etc • Food laws	2016-till date	

			• Introduction to primary milk processing equipment • Post Harvest Management and value addition of horticultural produce with reference to Sikkim • Integrated approach of processing for climate change mitigation • Harvesting, Packing, storage and grading of mushroom • Hazards, risk and quality parameters associated with composting • Selection of important types of mushroom based on market demand, climate conditions of the farm, growing season and investment • Demonstration of Horticultural produce processing machines • Recent approaches in Pre and post harvest management of horticultural crops for enhanced farm income • Post Harvest Management and Value Addition • Post harvest Management of Horticultural crops in organic production system • Innovations in food processing technologies for better marketability • Post Harvest Management of turmeric and ginger		
5.	Dr. R K Raigar Assistant Professor (Dairy Engioneering)	CAEPHT Ranipool	• Organized 3 days training on ñIntensive Dairy Farming and Energy Managementò as Course Director during 19-21.09.19 sponsored by CCS- National Institute of Agricultural marketing (NIAM) Jaipur, Rajasthan • Organized 03 days training on ñDesign and construction of fish farm and hatcheryò during 05.03.20-07.03.20 funded by CAU, Imphal	2017-till date	

Department of Soil and water conservation Engineering

Sl. No.	Name and Designation	Institution	Details of work done	Duration	Remarks
1	Dr. Deepak Jhajharia, Professor	CAEPHT	6) Adaptation of energy-efficient agricultural technologies for climate change mitigationò under the theme area of Climate Change Adaptation and Mitigation Strategies 7) Low-cost greenhouse technology in NEH region 8) 9th Congress of Society of Extension Education (Agra) and National	June, 04-24, 2018 17 Sept., to 15 Dec, 2018	Course Director of 21 days ICAR summer school Course Director of

			Conference	15-17 Nov, 2018	90 days PFC (New Delhi) Skill Development Training program
			9) Sensitization of establishment of Agri-clinics and Agri-business centre scheme	4 February, 2019	Joint Secretary of local organizing committee
			10) Convener of a session of National Workshop of Soil Conservation Society of India(New Delhi)	2017	Resource Person in workshop MANAGE, Hyderabad Organized jointly by SCSI, New Delhi and CPGS Barapani ICAR-CIPHET, Ludhiana -do- SCSP scheme of ICAR-CIPHET, Ludhiana, Punjab
			11) Construction and use of low-cost bamboo-based polyhouse for high-value vegetables cultivation in farmers field	2018-20	
			12) Installation of Gravity-fed Irrigation system in the Green house of a local progressive farmer	-do-	
			13) Construction of solar tunnel dryers in two SC progressive farmers fields	2019-20202	
			14) Video A video on progressive farmer Mr. Mitra Lal Sharma of Soureni village, Assam Lingzey was also released during 14th Annual Workshop of AICRP on PET		
			15) Off-campus awareness camp on Plasticulture Engineering Technology was organized by AICRP on PET through the SCSP Funds at Upper Bhasmey, Padamchey, East Pandam and Soureni, Assam Lingzey.		
			16) Off-campus training program on ñApplications of the plasticulture engineering technologies for vegetable cultivations in greenhouseò by AICRP-PET at Soureni village, Assam Lingzey (East Sikkim).		
2	Dr. Jagabandhu Panda, Associate Professor	CAEPHT	Natural Conservation & Management Planning using Open Source Software	27th Nov- 1st December,	As Course Coordinator

				2018	
3	Dr. Santosh Rangrao Yadav	CAEPHT	(1) Training programme on ócCultivation of vegetables and flowers under protected condition & demonstration of different polyhouse structures for hill agricultureô (2) Conducted a training programme for 30 farmers from Sikkim on ódImproved System of Vanaraja Poultry Farming under Backyard Conditionô (3) Training programme on óGIS and Remote Sensing Application in Watershed Management and Developmental Planningô (4) Training programme on ódEstimation of water availability and rainfall analysisô in training programme on óPlanning for enhancing water use efficiency with emphasis on efficient utilization of agricultural waterô (5) Regional Workshop on óEnvironmental Science and Management Developmentô (6) Training programme on ódNatural Resource Conservation and Management Planning using Open Source Softwareô	January 19-21, 2015 January 06-08, 2016 February 28 to March 4, 2017 December 11-15, 2017 March 27-28, 2018 November 27 to December 01, 2018	As an instructor As Course Director As an instructor As an instructor As an instructor As an instructor
4	Dr. Ghanashyam Singh Yurembam, Assistant Professor	CAEPHT	1) ñNatural Conservation & Management Planning using Open Source Softwareò	27th Nov- 1st December, 2018	Course Co-Cordinator
			2) Sensitization Programme on Agri-Clinics and Agri-Business Centres (AC & ABC) Scheme	4th Feb, 2019	Course Co-Cordinator
			3) ñNatural Conservation & Management Planning using Open Source Softwareò	27th Nov- 1st December, 2018	As Instructor

			4) Sensitization Programme on Agri-Clinics and Agri-Business Centres (AC & ABC) Scheme	4th Feb, 2019	As Instructor
			5) ñClimate Change Risk Mitigation for Marginal Farmers of Himalayan Region in Sikkimò	26-28, Sep, 2019	Resource Person
			6) Installation of Gravity-fed Irrigation system in the Green house of a local progressive farmer	3-6 feb, 2020	Hands on Training at Assam Lingzey, Sohreni Village, East Sikkim,

S. No.	Name and Designation	Institution	Details of work done	Duration	Remarks
1	Dr. B C Kusre Professor	CAEPHT Ranipool	Delivered Lecture on District Level Program on Jal Shakti Abhiyan at KVK Namthang	October 02, 2019	Organized by KVK Namthang
			Participated in KrishiMela organized by KVK, Namthang	September 03, 2019	Organized by KVK Namthang
			Organized 3 days training program on Planning for enhancing water use efficiency with emphasis on efficient utilization of Agricultural water	March 22-24, 2019	Sponsored by ATARI through CAU, Imphal
			Delivered lecture in training program on ñNatural Resources Conservation and Management planning using open source software	November 29, 2018	CAEPHT
			Delivered lecture of ñWater Management Strategies under organic farmingò in training program on Advance Organic Technologies and its promotion through innovative extension approach at Kalimpong.	October 26, 2018	ICAR-Kalimpong
			Organized a two days regional workshop on Environmental Science and Management Developmentò	March 29-30, 2018	in collaboration with NERIWALM, Tezpur
			Delivered lecture on Significance of World Soil Day	December 05, 2017	World Soil Day
			Delivered lecture on Opportunities in Agricultural Sector	December	Agricultural

				03, 2017	Education Day
			Conducted workshop on water resources management and scope for future research and development in Sikkim	May 03, 2017	Sponsored by NRDMS Division of DST
			Conducted Training program on Remote Sensing and GIS Application for Watershed Management and Development planning for the officers of State Government	February 28 to March 04, 2017	CAU
			Organized an interaction session of Students with Sri V K Agarwala on student career counselling	August 20, 2016	CAEPHT
			Organized one day workshop on ñProblems, prospects and developing strategy for Water Resources Management in South Sikkim	June 16, 2016	Sponsored by NRDMS Division of DST
			Delivered lecture in one day seminar on Agro Textiles: Holistic alternative to enhance yield and profitability of horticulture and agriculture.	February 10, 2016	Organized by Ministry of Textiles, Government of Sikkim
			Delivered lecture on Roof top rain water harvesting and runoff estimation for design of water harvesting structure	September 17, 2015	Training sponsored by Government of Orissa
2	Dr. Ajay Kumar Vashisht, Associate Professor	CAEPHT Imphal	**Trainings organized** Organized one-week training program on ñWater Management Through Sprinkler and Drip Irrigation & Water Savingdevicesò under the Sub-Mission on Agricultural Mechanization (SMAM).	April 11-16, 2016	Sponsored by Govt. of Sikkim
			Organized one-day training on the topic ñWater Management Strategies for Sikkimò.	March 30, 2017	Sponsored by CAU Imphal
			Invited Lectures **Topic**: Groundwater management through skimming wells. Five-days capacity building program on ñSustainable Agriculture for Food Security & enhancing income to the farming communityò for officers of agriculture department of Odisha	April 4-8, 2016	Sponsored by Govt. of Odisha
			Topic: Agro textiles: Productivity enhancement by protection of crops using crop covers. One-day seminar on ñHolistic alternative to enhance	February 10, 2016	Organized by Ministry of

			yield and profitability of Horticulture and Agricultureò.		Textiles, Government of Sikkim
			Topic: Springs as a source of water and their rejuvenation. A 10-days training program on ñDiversification of Hill Agriculture: An Approach for Climate Change Adaptation and Mitigationò.	February 23, 2016	Organized by ICAR under the aegis of NICRA
			Topic: Soil moisture conservation strategies for improving waterproductivity. A 10-days training program on ñDiversification of Hill Agriculture: An Approach for Climate Change Adaptation and Mitigationò.	February 24, 2016	Organized by ICAR under the aegis of NICRA
			Topic: Soil moisture conservation strategies for improving water productivity. A 10-days training program on ñAgro-Ecological Approaches for Sustainable Mountain Farming under Changing Climatic Scenarioò.	March 19, 2015	Organized by ICAR under the aegis of NICRA
3	Dr. Ghanshyam T. Patle, Assistant Professor	CAEPHT Imphal	1. Course coordinator of Capacity Building Programme on Sustainable Agricultural Production and Processing: Equipment and Technologies during September 14-18, 2015 sponsored by Agricultural and Food Department, Govt. of Odisha 2. Course coordinator of Dairy farming an option for improving livelihood of small and marginal farmers of Sikkim during September 8-10, 2015 3. Delivered a lecture on Efficient Water Management Technique for sustainable Hill Agriculture during the training programme on Sustainable Agricultural Production and Processing: Equipment and Technologies organized by CAEPHT, (CAU), Sikkim and Sponsored by the Directorate of Agriculture & Food Production, Govt. Of Odisha, Bhubaneswar duringSeptember 14-18, 2015 4. Lecture delivered on More crops per drop of Water in hill agriculture during one-day Seminar on Agro textiles: Holistic alternative to enhance yield and profitability of Horticulture and Agriculture organised by Ministry of Textiles & Government of Sikkim & COE- Agrotech, SASMIRA in association CAEPHT on 10th February, 2016 5. Tour leader for Regional Agri Fair, 2016 held at C. V. Sc. & A. H., Aizawl, Mizoram organized by the CAU, Imphal during February, 03-05, 2016 for exhibiting the stall of CAEPHT (CAU), Ranipool, Sikkim 6. Tour leader for KrishiUnnatiMela, 2016 held at IARI campus, New	2015-2016	

			Delhi organized by the Ministry of Agriculture and farmersô Welfare, GOI during March, 19-21, 2016 for exhibiting the stall of CAEPHT (CAU), Ranipool 7. Lead Speakerduring KisanGosthi: Farmers-Scientists Interaction session CAU Regional Agri-Fair, 2016 8. Rapporteur for farmers scientists Interaction forum on 04/02/2016 during CAU Regional Agri ï Fair, 2016.		
			1. Course Coordinator of five daysô capacity building training on sustainable agriculture for food Security and enhancing income to the farming community sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during April 4-8, 2016 2. Course Coordinator of five daysô capacity building training on Conservation Agricultural practices and Post-harvest management for value addition sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during June 6-10, 2016 3. Course Coordinator of Awareness on Skill Development programs in Agricultural Engineering and Technology stream on July 31, 2016 4. Course Coordinator of five daysô capacity building training on Integrated farming system for sustainable agriculture sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during September 5-9 2016 5. Course Coordinator of one week MTC on Adoption for secondary agriculture for employment generation Sponsored by the Ministry of Agriculture and Farmerôs Welfare, GOI, New Delhi October 17-24, 2016 6. Course coordinator of training program on water management strategies for Sikkim held at CAEPHT on March 30 2017 **7. Lectures delivered:** - Resource person for five daysô capacity building training on sustainable agriculture for food Security and enhancing income to the farming community sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during April 4-8, 2016 - Resource person for five daysô capacity building training on Conservation Agricultural practices and Post-harvest management for value addition sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during June 6-10, 2016 - Resource person for one-day awareness on Skill Development programs	2016-2017	

			in Agricultural Engineering and Technology stream on July 31, 2016 - Resource person for five daysô capacity building training on Integrated farming system for sustainable agriculture sponsored by Directorate of Agriculture and Food Production, Govt. of Odisha during September 5-9 2016 - Resource person for one week MTC on Adoption for secondary agriculture for employment generation Sponsored by the Ministry of Agriculture and Farmerôs Welfare, GOI, New Delhi October 17-24, 2016 - Resource person for training program on water management strategies for Sikkim held at CAEPHT on March 30 2017. - Resource person for training organized by AICRP on Plasticulture Engineering and Technologies (PET), CAEPHT during March 23-24, 2017 - Resource person for ICAR Sponsored training under PanditDeenDayalUpadhyayUnnatiKrishiShikshaYojana on Organic Farming/ Natural Farming and Cow based economy held during 24-28 March, 2017. - Resource person for One day off campus training program on ñUse of plastics on protected organic cultivation in Sikkimò Organized by AICRP on PET, CAEPHT on 06/01/2017. - Resource person for Training on Simulation Models in Irrigation, Drainage and Water Resources Management organized by College of Agricultural Engineering, Bapatla, Andhra Pradesh during 2-4 March, 2017		
			1. Course coordinator of training program on Livestock based Integrated Farming System during June 20-22, 2017 2. Course coordinator of training program on Integrated Farming System for Sustainable Hill Agriculture during September 18-20,2017 3. Course coordinator of training program on Planning for enhancing water use efficiency with emphasis on efficient utilization of agricultural water during December 11-15, 2017 sponsored by Directorate of Extension Education, Imphal 4. Resource person for ICAR Sponsored Training under Pt. DeenDayalUpadhyayUnnatKrishiSikshaYojana, Organized by ICAR-NRC for Orchids, Pakyong, Sikkim during 13/03/2018 to 17/03/ 5. Resource person for Training program on Integrated farming system	2017-2018	

			for sustainable hill agriculture during September 18-20, 2017. 6. Resource person for Training Program on Sustainable water management for boosting productivity in hilly region organized by Organized by ATMA, East Sikkim department of FS&ADD, Sikkim during 22.08.2017 & 28.08.2017		
			1. Convener of Local Organizing Committee of the 9th National Extension Education Congress-2018 on Climate Smart Agricultural Technologies: Innovations and Interventions held at CAPHET, Ranipool during November 15-17, 2018. 2. Organised one-day Agricultural Workshop as Organizing Secretary on Utilization of Fuel Efficient Water Pump and Solar PV Water Pump for Conservation of Petroleum Products sponsored by PCRA, Ministry of Petroleum and Natural Gas, Govt. of India held at CAEPHT Ranipool on 27.03.2019. 3. Course Coordinator: of 21 days Summer School on ñEnergy Efficient Agricultural technologies for climate change mitigationò sponsored by the ICAR and organized at CAEPHT, Ranipool, Gangtok, Sikkim during June 4-24, 2018 4. Co-course coordinator for training programme on ñPlanning for improving water use efficiency for enhanced crop productionò Sponsored by ICAR-ATARI, ZONE-VII, Umiam and organised at CAEPHT, Ranipool, Sikkim during March 22-24, 2019 5. Four lectures delivered during ICAR sponsored 21 days Summer School on Energy Efficient Agricultural technologies for climate change mitigation organized at CAEPHT, Ranipool, Gangtok, Sikkim. During June 04-24, 2018 6. Three lectures delivered during Ninety days PFC sponsored Skill Development Training Programme on "Low-cost Greenhouse Technology in NEH Region" during September 17, 2018 to December 15, 2018 sponsored by Power Finance Corporation Limited, New Delhi 7. Resource person for Training program on Planning for improving water use efficiency for enhanced crop production during 22-24th March, 2019 sponsored by Sponsored by: ICAR-ATARI, ZONE-VII, Umiam; Meghalaya 8. Resource person for 25 days Skill Development Training on ñSolar	2018-2019	

			Pump Technician during February 14, 2019 to March 10, 2019 sponsored by Agriculture Skill Council of India (ASCI), New Delhi 9. Resource person for the One day Agricultural Workshop on Utilization of fuel efficient water pump and solar PV water pump for conservation of petroleum products		
			1. Organised one-day Agricultural Workshop as **Organizing Secretary** on ñUtilization of Fuel Efficient Water Pump and Solar PV Water Pump for Conservation of Petroleum Productsò sponsored by PCRA, Ministry of Petroleum and Natural Gas, Govt. of India held at CAEPHT Ranipool on February 22, 2020. 2. Course Coordinator of Three Days Training Programme on ñIntensive Dairy Farming and Energy Managementò sponsored by CCS-NIAM, Jaipur, Rajasthan and held at CAEPHT, Sikkim during September 19-21, 2019 3. Course Coordinator of Three Days Training Programme on ñClimate Change Risk Mitigation for Marginal Farmers of Himalayan Region in Sikkimò sponsored by CCS-NIAM, Jaipur, Rajasthan and held at CAEPHT, Sikkim during September 26- 28, 2019 4. Course Coordinator of Awareness cum training programme on ñRainwater harvesting and use of micro irrigationò at Parkha Block of East district of Sikkim on 16.03.2020 5. Course Coordinator of one-day Training and Demonstration of Gravity fed drip irrigation system for hilly terrain at Nimthang, East district of Sikkim on 13.10.2019 6. Resource person for the three days Training Programme on Intensive Dairy Farming and Energy Management held at CAEPHT, Sikkim during September 19-21, 201 sponsored by CCS-NIAM, Jaipur. 7. Resource person for Three Days Training Programme on Climate Change Risk Mitigation for Marginal Farmers of Himalayan Region in Sikkim held at CAEPHT, Sikkim during September 26-28, 2019 sponsored by CCS-NIAM, Jaipur. 8. Resource person forOne Day Agricultural Workshop on Utilization of fuel efficient water pump and solar PV water pump for conservation of petroleum products sponsored by PCRA, Ministry of Petroleum and Natural Gas, Govt. of India on 22.02.2020 9. Resource person for National Workshop on Benchmarking of	2019-2020	

			Irrigation Schemes organized by Water Resources Department, Nagaland at Kohima, Nagaland on 18.10.2019 10. Resource person for One day Seminar on low cost technologies for water conservation and solid liquid waste management organized by the MSME, Gangtok Centre at KVK, Namthang, South Sikkim on 30.08.201		
4	Dr Shivam Assistant Professor	CAEPHT, Ranipool	Presentation on snowmelt runoff modeling, NRSC, ISRO	April 2018	
			Delivered expert lecture at KVK South Sikkim, Namthang	September 15 2019	
			Delivered expert lecture on climate risk mitigation for marginal farmers of Himalayan region of Sikkim	September 26-28 2019	
			Delivered 2 expert lectures on application of mulch in vegetable cultivation	February 3-6 2020	

Department of Renewable Energy Engineering

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
			Conducted Training for State Govt. Official and Farmers Official and Farmers as Course Director/Coordinator (During Last 05 Years)		
1	Prof. Mahendra S. Seveda Professor and Head-REE	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	Double Pot Improved Biomass Cook Stoves Construction in rural areas of Sikkim	July 29-31, 2015 (03 Days)	**Total Number of Farmers/Govt. Official/Faculty Members/Unemployed Youth:** 406
			Sustainable Agricultural Production and Processing: Equipment and Technologies	September 14-18, 2015 (05 Days)	
			Utilization of Non-conventional Energy Sources in Agriculture	January 11-16, 2016 (One Week)	
			Sustainable Agriculture For Food Security & Enhancing Income to the Farming Community	April 4-8, 2016 (5 days)	
			Conservation Agricultural Practices and Post Harvest Management for Value Addition	June 06-10, 2016 (5 days)	
			Awareness on Skill Development Programmes in Agril. Engineering & Technology Stream	July 31, 2016 (1 Day)	

			Integrated Farming System for Sustainable Agriculture	September 05-09, 2016 (5 days)	
			Model Training Course on Adoption of Secondary Agriculture for Employment Generation	October 17-24, 2016 (8 days)	
			Awareness Programme on Skill Development on Greenhouse Technology including Solar Technology and Micro Irrigation Systems	Two days (July 28-29, 2018)	
			Skill Development Training On Job Role of Solar Pump Technician	25 Days (February 14, 2019 to March 10, 2019)	
			Intensive Dairy Farming and Energy Management.	3 days (September 19-21, 2019)	
			Climate Change Risk Mitigation for Marginal Farmers of Himalayan Region in Sikkim.	3 days (September 26-28, 2019)	
			Organized International/National: Workshop/Seminar/Conference/Congress/Winter School: 07 (Last 05 Years)		On the Occasion of Silver Jubilee Year-2018 of Central Agricultural University, Imphal, Manipur, 21 days ICAR sponsored Summer School on ñAdoption of energy efficient agricultural technologies for climate change mitigationò was Successfully Completed as Course Coordinator at College of Agricultural
			Workshop on Utilization of Energy Efficient Improved Biomass Cook Stoves	October 29, 2015	
			International Conference on Emerging Trends in Science, Technology, Agriculture & Management-2016	April 21-23, 2016	
			National Workshop on Soft Computing Modeling-Food Processing, Pharmaceutical Science & Export Management	April 21-23, 2016	
			Twenty-one days ICAR sponsored Summer School on ñAdoption of energy efficient agricultural technologies for climate change mitigation	21 days (June 04-24, 2018)	
			9th National Extension Education Congress-2018 on Climate Smart Agricultural Technologies: Innovations and Interventions	November 15-17, 2018	
			Workshop on Utilization of Fuel Efficient Water Pump & Solar PV Water Pump for Conservation of Petroleum Products	March 27, 2019	

			Workshop on Utilization of Fuel Efficient Water Pump & Solar PV Water Pump for Conservation of Petroleum Products	February 22, 2020	Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim during June 04-24, 2018 & 9th National Extension Education Congress-2018 on Climate Smart Agricultural Technologies: Innovations and Interventions was Successfully Organized as Organizing Secretary at College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim during November 15-17, 2018.
2.	S M Kamaruzzaman Assistant Professor	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	1. Acted as Resource person for farmers training programmes. 2. Developed 3 solar dryer under PET AICRP 3. Designed & Developed a Solar Tunnel Dryer which was funded by Natures Gift RangpoSikkim . total cost was 2.50 lakhs	July 2006- Till date	Dissemination of Renewable Energy Technologies through lectures and training programmes
3.	Dr. Narale Pradip Digambar Assistant Professor	College of Agricultural Engineering and Post Harvest	1. Resource person for ñIntensive Dairy Farming and Energy Managementò program and delivered lecture on *"Biogas Production from Animal Waste",* Organised by NIAM, Jaipur Rajasthan during September 19-21, 2019. 2. Resource person for ñClimate change mitigation in	July 2019- Till date	Popularization of Renewable Energy Technologies through lectures and training programmes

		Technology, Ranipool, Gangtok, Sikkim	agriculture for NEH region of Sikkimò program and delivered lecture on *"Role of Biogas Technology for Climate Change Mitigation"* Organised by NIAM, Jaipur Rajasthan during September 26-28, 2019 3. Resource person for ñScope of plasticulture engineering technologies in agriculture and allied activitiesò and delivered lecture on *"Study of different components of the FRP based biogas plant in NEH region"* organised by AICRP on PET, CAEPHT, CAU, Ranipool, Gangtok Sikkim during 3-6 March 2020. 4. Organized One day Training Workshop on Utilization of Fuel Efficient Water Pump and Solar PV Water Pump for Conservation of Petroleum Products as Organising Secretary on February 22,2020.		
4.	Dr. Kharpude Sudhir Narayan Assistant Professor	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	1. Resource person for ñIntensive Dairy Farming and Energy Managementò program and delivered lecture on *Energy Conservation and management in Dairy farming*, Organised by NIAM, Jaipur Rajasthan during September 19-21, 2019. 2. Resource person for ñClimate change mitigation in agriculture for NEH region of Sikkimò program and delivered lecture on *Climate change mitigation in agriculture by processing of Biomass (agricultural residues and by-product)* Organised by NIAM, Jaipur Rajasthan during September 26-28, 2019 3. Resource person for ñScope of plasticulture engineering technologies in agriculture and allied activitiesò and delivered lecture on *Application of solar tunnel dryer for value addition of spices* organised by AICRP on PET, CAEPHT, CAU, Ranipool, Gangtok Sikkim during 3-6 March 2020. 4. Organized One day Training Workshop on Utilization of Fuel Efficient Water Pump and Solar PV Water Pump for Conservation of Petroleum Products as Organising Secretary on February 22,2020.	July 2019- Till date	Popularization of Renewable Energy Technologies through lectures and training programmes

Annexure: 6.5.2.3
Research

Department of Basic Engineering and Applied Science

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
1.	Dr A. B. Sherpa, Assistant Professor (Sr. Scale) of Agronomy	CAEPHT (Central Agricultural University, Imphal), Ranipool, Sikkim	AICRP on APA Scheme 1. Equipment and technology to mechanize conservation agriculture to protect the crop from stress on terraces under rainfed hill farming condition in Sikkim of NEH Region. As Co-PI 2. Feasibility study of round the year production of broccoli, brinjal and mushroom in low cost bamboo poly house structure. As PI of Sub- project 3. Feasibility study of round the year production of flower(Gerbera and Gladiolus) in low cost bamboo poly house structure. As Co-PI	03 yrs.(2010-2013)	Completed
			ICAR project entitle Development of equipment and technology to mechanize conservation agriculture (CA) on terraces under rain fed hill farming condition of NEH Region. As Co-PI	02 yrs.(2016 & 2017)	Completed
			IRP project entitle Genotypic variation in growth and yield parameters and nutrient uptake of rice genotype under aerobic and wetland rice cultivation in Sikkim. As Co-PI	03 yrs.(Since 2018)	Continue
2	Dr Dhananjoy Roy, Assistant Professor (Sr. Scale) of English	Nil	Nil	Nil	Nil

3	Er.Nandita Sen Asst.Professor (Electrical Engg.)	Nil	Nil	Nil	Nil
4	Phuritshabam Robert, Assistant Professor, (Computer Science & Engineering) Currently Pursuing PhD.	Nil	Nil	Nil	Nil
5	Dr. Chakpram Birendrajit Assistant Professor (Soil Science)	College of Agricultural Engineering and Post Harvest Technology, (C.A.U.) Ranipool, Gangtok, Sikkim	Soil sampling, survey and analysis of physical and chemical properties of soil	College of Agricultural Engineering and Post Harvest Technology, (C.A.U.) Ranipool, Gangtok, Sikkim	Soil sampling, survey and analysis of physical and chemical properties of soil
6	Dr. Abujam Anuradha Devi, Assistant Professor (ABM) and Co.PI	ICAR (4.21 lakhs)	ICAR project entitled ñCritical Analysis of Examination System in Agricultural Education in Indiaò as Co. PI	One year (2017-18) completed on March, 2018	Completed
		ICAR-NIAP (49.00 lakhs)	ICAR-NIAP-CAU Collaborative Project ñPolicy Imperatives for Promoting Value Chains of Agricultural Commodities in Indiaò as Co. PI	Three (03) years (2018-2020)	Ongoing extended till March, 2021
		National Mission On Himalayan Studies (NMHS) G.B. Pant National	NMHS-SG project entitled "Livelihood Option for Small Land Holding Rural Farmers of Sikkim - Integrated Pyramidal Farming Model" as PI	Three (03) years Initiation of the project w.e.f. 10.01.2019	Ongoing

		Institute of Himalayan Environment and Sustainable Development (GBPNIHESD), Uttarakhan (33 lakhs)			
7	Er. Rajiv Pradhan, Assistant Professor (Electronics Engineering & Instrumentation)	Nil	Nil	Nil	Nil
8	Dr. Srikanta Kumar Meher Assistant Professor (Mathematics)	CAEPHT, CAU, Sikkim	Research Advisory Committee Member: Mr. Solanke Krishna Rustam Rao (PhD FMPE) Mrs. Patil Swati (PhD. PFE) Mr. Mayanglambam Ukil Singh (PhD. FMPE) Ms. Jyoti Lehre (PhD. FMPE) Mr. Asif Beg (PhD. FMPE) MS. Prachi Yadav (MTech. SWCE) Mr. Sandeep Kumar (MTech. SWCE) Research Paper Published: Analytical Treatment and Convergence of Adomian Decomposition Method for FIngero-Imbibition Phenomena Arising during Oil Recovery Process; Mathematical Science Letters; Vol.5, No. 3, 303-308. Lie Theoretic Approach to Instability Phenomenon Arising in Double Phase Flow through Porous Medium with Capillary Pressure. Communicated Book Publication: Group Analysis Method for Solving Non-linear Differential Equation, Lambart Academic Publishing	2016-2020 2017-2020 2018-2020 2019-2020 2019-2020 2016-2018 2017-2019 2016-2020 2016-2020	

			.ISBN: 3659971472 Thousand Formulas Book for Mathematic and Statistics Part-I, Communicated for Publication.		
9	Smt.T. Loidang Chanu,Assistant Professor ,Statistics	Nil	Nil	Nil	Nil
10	Dr. Sushma Gurumayum, Assistant Professor	Nil	Nil	Nil	Nil
11	Dr. Ph. Baleshwor Sharma, Assistant Professor (Biochemistry)	Nil	Nil	Nil	Nil

Department of Farm Machinery and Power Engineering

Sr. No.	Name and designation	institution	Details of work done	duration	Remark
1.	Dr. NS Chauhan Professor	CEAPHT (CAU), Ranipool, Sikkim	• PI of AICRP on ESA (Since May 2017 to till date • Guided 6 B.Tech. students and 02 M.Tech. Students • Conducted Adoptive trials, front-line demonstrations and training of ergonomically designed farm tools and equipment • Development of ergonomically designed farm equipment matching to body dimensions and strength parameters of Sikkim workers • Research Papers published:2	24/12/2014 to Till date	

2.	Dr. S N Yadav Associate Professor /Professor	CAU-CAEPHT, Ranipool, Sikkim	1. Mechanization Status and its Impact on Production of Rice and Maize crops in Sikkim 2. Feasibility testing of manual four row pre-germinated rice seeder for improving the productivity and sustainability of rain fed rice cultivation of Sikkim 3. Development of light weight knapsack type surface residue chopper for adoption in no-tillage cultivation of crops in valley/terraces and hill slopes 4. Development of manually operated engine assisted light weight zero till drill for direct seeding on terraces for conservation mechanization 5. Production of charcoal briquettes from selected forest waste of Sikkim and their feasibility testing Studies on some relevant properties of large cardamom for conceptual design of harvester	9 months 01 year 1 year 3 months 1 year 1 year 1 year	Intramural Research project of CAU, Imphal
		ICAR under NAIP	A value chain of aromatic crops of NE India	5 years	-
		ICAR-AICRP	1. AICRP on Ergonomics and Safety in Agriculture AICRP on Utilization of Animal Energy in Agriculture (UAE)	2 years 1 year	-
		ICAR	Development of equipment and technology to mechanize conservation agriculture on terraces	2 years	-

			under rainfed hill farming condition of NEH Region		
		Ministry of Agriculture and Farmerôs Welfare	Establishment of Farm machinery Testing Centre	Continue	-
3.	Dr. S.K. Satpathy, Asst. Professor	CEAPHT (CAU), Ranipool, Sikkim	• Completed one IRP project • Guided 11 B.Tech. students and 01 M. Tech. Student • Awarded Ph.D in 2018 from IIT Delhi • developed small farm equipments and machines suitable for hill agriculture prototype feasibility testing and front line demonstration of various small farm tools, equipment and machines	24/08/2007 to till date	I/C PI of AICRP on FIM w.e.f. 25/02/2015
4	Shankar Swarup Das (Assistant Professor)	National Institute of Technology, Agartala (during Ph. D. study leave period)	Title of Research: 1. Study of Friction and Wear Behaviour of Hip Joint Prosthesis: Experiments and Analysis	3 years	06 published papers based on the research works.
		College of Agricultural Engineering and Post-Harvest Technology, Ranipool	2. Initiated on new project on Foot stepped power generation for thresher machine as Co-PI of AICRP on ESA	2 years	proposed
5	Sujeet Kumar Chauhan (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	1. Completed **09** sub projects, and 03 sub project are ongoing. 2. Developed 12 no. of Improved Animal drawn implements for North Eastern hill region 3. Research paper published in referred journals (15 number) 4. Research paper published in Non	2012-2021	Working in the capacity PI AICRP on UAE w.e.f 05.05.2014 to till continue

			referred journals (33 numbers) 5. Popular Article: 13 No. 6. Technical bulletin 03 number 7. Technical report 06 number		
6	Ngangkham Devarani (Assistant Professor)	Nil	Nil	Nil	Nil

Department of Processing and Food Engineering

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
1.	Dr. R.P. Misra, Professor	IARI, CARI, CIRG, ICAR HQ.	i) Agricultural structures ii) Animal Environment interaction iii) Feeding and watering devices for small ruminant 1. iv) International and National training of scientists	1976-2015 (39 years)	During 1976-2020 I was also engaged in coordination, management and administration
2.	Dr Sujata Jena Associate Professor		• Technology development for production of hurdle processed passion fruit jam and jelly • Application of blending/mixture technology for development of different types of beverages using locally produced horticultural crops like	• 2009-2011 • 2009-2010	• Standardized process for production of passion fruit jam and jelly using passion fruit skin and pulp. • Standardized process for production of blended beverages like RTS and squash from Sikkim mandarin, passion fruit and

			Sikkim Mandarin, passion fruit and ginger etc. • Establishment of Institutional Level Biotech Hubs (IBThubs) by DBT under Special Programme for North Eastern States of India • Design and development of a composite osmotic dehydrator for fruits and vegetables • Enhancing livelihood of farmers in Sikkim Darjeeling Himalayan belt thorough possible interventions in processing and value addition of underrated horticultural and spice crops	 • 2014-2019 • Ongoing since 2017 • Ongoing since 2019	ginger • One IBT hub was established at CAEPHT, Ranipool and about 128 students/staff were trained in microbial food analysis and fermentation. • Practical classes and research work of UG, PG and PhD were conducted utilizing the chemicals and glassware procured through the projects • DG set procured through the project is being utilized for providing uninterrupted power supply to various laboratories of the department. • A composite osmotic dehydrator skid is being developed.

					• Benchmark survey of selected villages is under process
3.	Dr B K Singh Assistant Professor		• Status of fishing gears and crafts of west and south districts of Tripura • Strategy and approach for comprehensive development of fisheries involving community based programs with special reference to NE region • Mapping of Fisheries Resources and Water quality of Major Rivers and Lakes of Sikkim		
4	Dr Said P P Assistant Professor	CAU, Imphal	• Enhancing Livelihood of Farmers in Sikkim Through Process Standardization and Mechanization of Yak Milk Cottage Cheese (Hard Churpi) Processing • Enhancing livelihood of farmers in Sikkim Darjeeling Himalayan belt through possible interventions in processing and value addition	2016-till date	• Conducted survey in four districts of Sikkim and Database of physiochemical properties of chayote, dalle, yalk milk were generated • Facilitated practical classes of B. Tech (Food Technology), M. Tech & PhD (Processing and

			of underrated horticultural and spice crops • Establishment of Institutional Level Biotech Hubs (IBT hubs) • Genotypic variations in growth and yield parameters and nutrient uptake of rice genotypes under aerobic and wetland rice cultivation in Sikkim		Food Engineering) through chemicals and glassware procured through the hub • The Biotech Hub received Good rating amongst all Hubs and project got extension of a Year 2016-17 • Identified and reported four different species of Bixa plant
5.	Dr. Rakesh Kumar Raigar Assistant Professor (Dairy Engineering)	CAEPHT Ranipool	• Enhancing Livelihood of Farmers in Sikkim Through Process Standardization and Mechanization of Yak Milk Cottage Cheese (Hard Churpi) Processing. • Process standardization of Yak milk paneer • Development of Instant Herbal Black Tea Tablet • Development of Paneer Whey Enriched Fruit Beverage • Development of Micronutrient Fortified Energy Bar for Malnutrition children and Adolescent girls	2017 to till date	

Department of Soil and Water Conservation Engineering

Sl.No.	Name and Designation	Institution	Details of work done	Duration	Remarks
1	Dr. Deepak Jhajharia, Professor	CAEPHT	1. Effect of organic manures and different moisture depletion levels on off season capsicum cultivation under poly house conditions in Sikkim. Funded by AICRP-PET, ICAR-CIPHET, Ludhiana 2. Effect of different types of soil less media on growth parameters and fruits yield of strawberry in eastern Himalayan region. Funded by AICRP-PET, ICAR-CIPHET, Ludhiana 3. Onion cultivation under low cost low tunnels for restricting over winter in eastern Himalayan region. Funded by AICRP-PET, ICAR-CIPHET, Ludhiana 4. Trends in Aridity Index over Northeast India ï under Masterôs thesis 5. Drought analysis using Copula over Northeast India ï under Masterôs thesis 6. Drought analysis over different districts of Arunachal Pradesh ï B. Tech. Thesis. 7. Climatology of wind speed over Sikkim ï B. Tech. Thesis. 8. Pan coefficient: analysis and trends identification over Northeast India 9. Estimation of monthly reference evapotranspiration and trend analysis: case studies from Northeast India	Three Years (2017-2020) -do- -do- 2017 2019 2019 2020 2020 2020	Completed
2	Dr. Jagabandhu Panda, Associate	CAEPHT	1. Developed regression model to predict the soil aggregate stability of Sikkim soils ï under Masterôs thesis 2. Geomorphological analysis of Watersheds of Sikkim	2 years each	Completed

	Professor		using RS & GIS- under Masterôs thesis 3. Developing Geostatistics model to predict soil erodibility of Sikkim soils ï under Masterôs research 4. Predicting Agricultural and meteorological drought using RS and GIS for Sikkim - under Masterôs thesis		
3	Dr. Santosh Rangrao Yadav		(1) ICAR, New Delhi funded AICRP on Plasticulture Engineering and Technologies (PET) (Myself as I/C PI) (2) ICAR, New Delhi funded ERP on ôDevelopment of equipment and technology to mechanize conservation agriculture on terraces under rain fed hill farming condition of NEH Regionô(Myself as Co-PI & I/C PI in the absence of regular PI) (3) Member of Organizing Committee of International Conference on Emerging Trends in Science, Technology and Management-2016 at CAEPHT-CAU, Ranipool (4) Member of Organizing Committee of National Workshop on Soft Computing Modeling- Food Processing, Pharmaceutical Science and Export Management at CAEPHT-CAU, Ranipool (5) Co-Course Coordinator of training GIS and Remote Sensing Application in Watershed Management and Developmental Planning	January 06, 2015 to June 04, 2016 November 2015 to September 2017 April 21-23, 2016 April 21-23, 2016 February 28 to March 4, 2017	
4	Dr. Ghanashyam Singh Yurembam, Assistant Professor	**CAEPHT**	1. ñEffect of organic manures and different moisture depletion levels on off season capsicum cultivation under poly house conditions in Sikkimò, AICRP, (C0-PI since 2016) 2. Development of a laboratory Model of Fog Harvesting Mechanism	**4 years** **2 Years**	**Completed** **Awaiting Sanction**

Department of Irrigation and Drainage Engineering

S. No.	Name and Designation	Institution	Details of work done	Duration	Remarks
1	Dr. B C Kusre Professor	CAEPHT Ranipool	Research papers published: 7 Books published: Nil Book chapters: 1 Conference proceeding: 2	2015-2020	
			Conducted research project onñDetermination of Hydraulic Performance of Micro irrigation System emitter for selection in Hilly Terrain of NE Regionò, Sponsored by Central Agricultural University.	Completed 2014	CAU sponsored research project
			ñNatural Resources Mapping and Developing strategy for Water Resources Mappingò Sponsored by Natural Resources Data Management System (NRDMS) Division; Department of Science and Technology, Government of India.	Completed 2017	DST Sponsored research Project
			ñSoil Moisture Characterization and its impact on productivity of large cardamom in Sikkimò; Sponsored by Science and Engineering Research Board (SERB); Department of Science and Technology, Government of India.	Completed 2018	SERB-DST Sponsored research Project
			As **Co- Principal Investigator-** Mapping of Fishery resources and water quality of major rivers and Lakes of Sikkim. Sponsored by Natural Resources Data Management System (NRDMS) Division; Department of Science and Technology, Government of India.	Completed 2019	DST Sponsored research Project
			Development of Soil Moisture Balance Models and Estimation of Water Foot prints of Major Crops in	2017	M Tech Project

			Sikkim.		
			Developing Water Resource Management Strategy for Sikkim using Remote Sensing and GIS.	2015	B Tech Project
			Estimation of Soil Erodibility Indices of East Sikkim District.	2016	B Tech Project
			Rainfall characterization and its analysis for improving Water Use Planning for Agricultural Development in Meghalaya.	2017	B Tech Project
			Applicability of TRMM rainfall data andits spatial and temporal analysis over Sikkim.	2018	B Tech Project
			Development of Soil Moisture Index in Sikkim.	2020	B Tech Project
2	Dr. Ajay Kumar Vashisht, Associate Professor	CAEPHT Ranipool	Research papers published: 9 Books published: 2 Book chapters: 3 Conference proceeding: 1	2015-2020	
			As **Principal Investigator**: Prediction of lean season discharge of springsforefficiently managing it to fulfil water needs ofthe mountain inhabitants	2012-2017	DST Project
			As **Principal Investigator**:Managing natural resources of a watershed for its sustainable development	2017-2020	IRP
			As **Principal Investigator**:Impact of particle size distribution of filtermaterial on water turbidity and flow rate for usein drip irrigation and ground water recharge	2015-2016	IRP
3	Dr.Ghanshyam T. Patle, Assistant Professor	CAEPHT, Ranipool	Research papers published: 19 Books published: 1 Book chapters: 6 Conference proceeding: Nil	2015-2020	
			CRP on Micro Irrigation Systems: **Project Investigator**	2020-2023	ICAR Funded Research Project
			Design development of micro irrigation system for hilly	2018-2020	ICAR Funded

			terrain. ICAR Network project on Engineering Intervention in Micro Irrigation Systems. (Amount: Rs. 23.35 Lakh) **Principal Investigator**		Research Project
			Effect of different types of soil less media on growth parameters and fruit yield of strawberry in eastern Himalayan Region (Amount: 16.84 Lakh), **Co-PI**	2017-2019	ICAR-AICRP on PET
			Performance of Asparagus (Asparagus officinalis) cultivation within naturally ventilated polyhouse as compared to open condition (Amount: 9.40 lakh), **Co-PI**	2015-2017	ICAR-AICRP on PET
			Assessment of infiltration rate of a paddy growing area in a micro watershed of East Sikkim (Amount: 1.16 Lakh), **Project Investigator**	2017-2020	IRP
			Development and performance evaluation of roof water harvesting system of a polyhouse for vegetable production (Amount: Rs. 5 Lakh), **Project Investigator**	2017-2020	IRP
			Evaluating the effect of hydraulic head and slope on gravity fed drip irrigation system in hills of Sikkim (Amount: Rs. 2 Lakh), **Project Investigator**	2017-2019	IRP
			Development of Solar Photovoltaic Water Pumping System for Micro Irrigation in NEH Region of India. (Amount: Rs. 5 Lakh), **Co PI**	2017-2020	IRP
			Spatio-temporal trend analysis of total rainfall and one-day maximum rainfall and its influence on agriculture in terms of drought in northeast India. (Amount: Rs. 2 Lakh), **Co PI**	2017-2020	IRP
4	Dr. Shivam, Assistant Professor	Assistant Professor, CAEPHT, Ranipool, Sikkim	Published Research Papers: 4 Published Book Chapter: 4 Submitted Project Proposals: 1	August 2017 ï 2020	
		Research Scientist	Snowmelt runoff modeling, irrigation water management using remote sensing data	December 2017 ï	

		NRSC, ISRO, Hyderabad		August 2019	

Department of Renewable Energy Engineering

Sl. No.	Name and designation	Institution	Details of work done	Duration	Remarks
			Research Projects: Completed		
1.	Prof. Mahendra S. Seveda Professor and Head-REE	College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	Promotion of Energy Efficient Improved Biomass Cook Stoves in Rural Areas of Sikkim	Three Years Three Months (16-08-2012 to 31-10- 2015)	**Renewable Energy Technologies Designed and Developed:** 09 Natural Convection type Solar Tunnel Dryer Natural Convection direct type Solar Dryer Portable PV Powered Forced Convection Solar Dryer Energy Efficient Double Pot Improved Biomass Cook Stove Mixed Mode Photovoltaic Powered Forced Convection Solar
			Design and development of the mixed model photovoltaic powered forced convection solar dryer of 10 Kg capacity for agro industrial application of NEH region	One Year (01-02-2014 to 31-01-2015)	
			Gap Analysis of Skill Development in Agricultural Engineering and Technology Education	One Year (01-04-2016 to 31-03-2017)	
			Critical Analysis of Quality of Post Graduate Research in Physical Sciences of Agricultural Education System	One Year (01-04-2016 to 31-03-2017)	
			Impact of Information and Communication Technologies (ICTs) in Agricultural Education in India	One Year Two Months (29-01-2016 to 31-03-2017)	
			Value Chain Analysis of Ginger (Zingiber Officinale L.) in North Eastern Hill Region of India	One Year One Month (01-03-2016	

				to 31-03-2017)	Dryer Solar Biomass Hybrid Dryer for Large Cardamom Drying Improved Large Cardamom Harvesting Knife Low-cost Gravity-based ropeway for Transportation of Agricultural Produce and Inputs Portable side Feed Smokeless Cook Stove
			Critical Analysis of Examination System in Agricultural Education in India	One Year (01-04-217 to 31-03-2018)	
			Research Projects: Ongoing		
			Development of Solar Photovoltaic Water Pumping System for Micro Irrigation in NEH Region of India	Started on 01-08-2017	Solar PV water pumping system was developed and installed at Instructional Farm of College of Agricultural Engineering and Post-Harvest Technology, Ranipool, Gangtok, Sikkim for micro irrigation. The system consists of 2 nos. of solar PV
			Performance Analysis of Solar Photovoltaic Module with changing Solar Insolation, Temperature and Tilt Angle on the Basis of Indoor and Outdoor Conditions in Sikkim	Started on 23-12-2019	

					modules (wattage: 40 watt each), DC motor (120 Watt capacity) water pump, Controller, cable, suction pipe, delivery pipe and drip irrigation system (100 m^2). Both the solar PV modules were connected with parallel. The solar PV array generated 12 to 18 voltage current of 5 Ampere.
2.	**S M Kamaruzzaman Assistant Professor**	College of Agricultural Engineering & Post Harvest Technology, Ranipool, Gangtok.	development of walk in type solar tunnel dryer useful for Sikkim performance analysis of polycarbonate covered walk in type solar tunnel dryer design & performance analysis of elevated absorber type solar tunnel dryer design of an elevated absorber solar tunnel dryer design and development of semi automatic type sun tracking solar tray dryer performance evaluation of elevated absorber solar tunnel dryer study of solar thermal water pump suitable for hilly region of Sikkim	October 2006 to Till date	Student Research projects

			design amd fabrication of solar thermal water pump		
		Jadavpur University Kolkata as JRF in DRDO project	Study of variation of thermal diffusivity of advanced composite materials of E-Glass fiber reinforced plastic(GFRP) in Temperature range 5-300K thermal diffusivity of advanced composite materials of e-Glass fiber reinforced plastic in Temperature range 5-120K	February 2004 to September 2005	Published in Refereed journal: Indian journal of Pure and Applied Physics (Vol: 47 No4 April.2009) Indian journal of Pure and Applied Physics (Vol: 47 No4 April.2009)
		College of Agricultural Engineering & Post Harvest Technology, Ranipool, Gangtok.	Application of Effective Scattering theory for validating Effective Thermal Diffusivity of Glass Epoxy Composite in the temperature range 50K-300K. Design of Inclined Absorber Modified Walk in Type Solar Tunnel Dryer.	October 2006 to Till date	Published in non-Refereed journal: TeachersôJournal, Vol II, 116-128ISSN No. 2395-5627 TeachersôJournal , Vol-III :223-232ISSN No. 2395-5627
3.	**Dr. Narale Pradip Digambar Assistant Professor**	College of Agricultural Engineering, Birsa Agricultural University, Ranchi,	Development of small scale portable biochar kiln for biochar production from agricultural waste residue. Bio-methanation study of piggery waste, poultry waste and goat/sheep waste in co-digestion with kitchen	4 December 2019 ï 19 July 2019	The research work was carried out under AICRP on EAAI scheme of ICAR at BAU Ranchi.

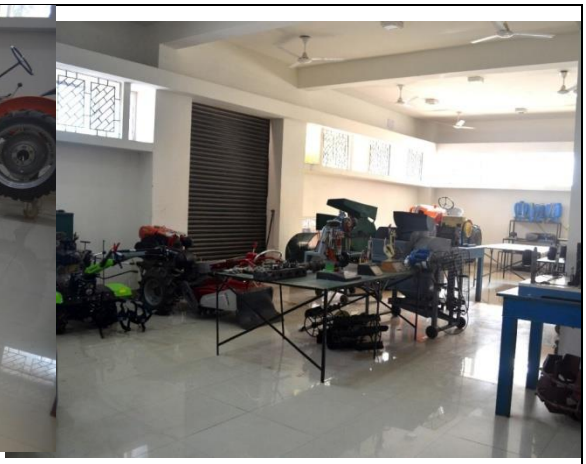
		Jharkhand.	waste.		
		College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	Design and economic analysis of community size floating drum biogas plant for NEH region of India. Sizing and economic evaluation of solar off-grid photovoltaic system for household electrification.	20 July 2019- Till date	The work was carries out under student research projects.
4.	**Dr. Kharpude Sudhir Narayan Assistant Professor**	Dadasaheb Mokashi CAE&T, Rajmachi, Maharashtra (affiliated MPKV Rahuri)	Development of DSS for Silo Design Development of Expert System for Drip Irrigation System Design Performance Evaluation and Comparative Analysis of Improved Metallic Biomass Cookstove with Traditional Cookstove Performance Evaluation Of Box Type Solar Cooker	January 2017 ï July 2019	Student Research projects
		College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim	Life cycle impact, costing and embodied energy analysis of Double Mirror reflector box type solar cooker	January 2020- July 2020	Student Research project Student Research project

Annexure 6.5.3.2

Laboratories of CAEPHT, Ranipool




Farm Machinery Laboratory



Farm Power Laboratory

Ergonomics and Safety Laboratory

Soil Dynamics Laboratory

Farm Machinery Testing Laboratory

Thermodynamics and heat engine laboratory

Theory of machine laboratory

College workshop

Renewable Energy Laboratory

Renewable energy Field Laboratory-1

Renewable energy Field Laboratory-2

Food Engineering Laboratory

Process Engineering Laboratory

Agricultural Structures & Environmental Control Laboratory Engineering laboratory

Food Analytics Laboratory

Pilot Plant

Washer-cum-peeler Machine

Slicing Machine

Grinding Machine

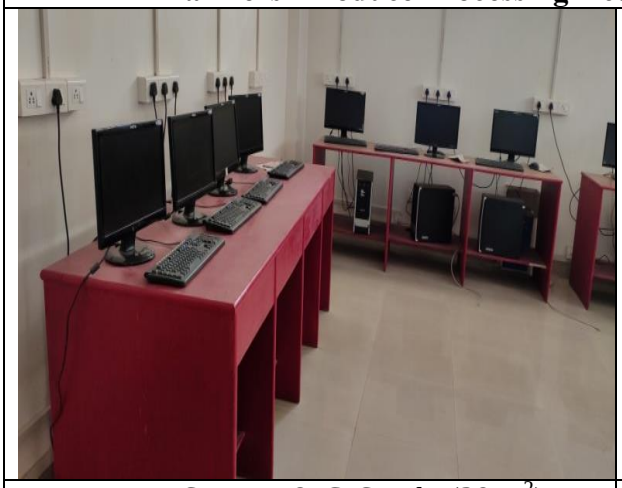
Planetary Mixer

Tray Drier

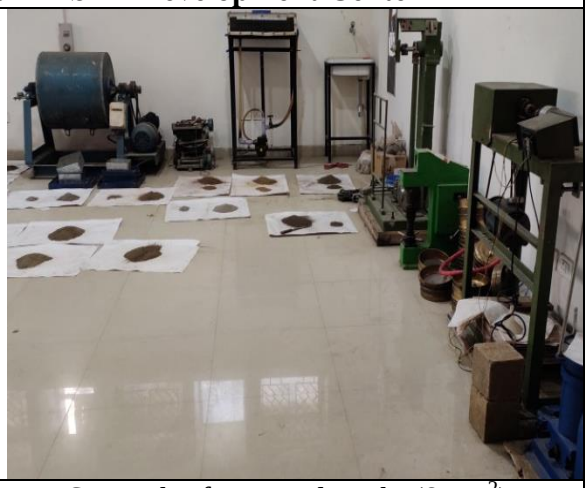
Noodles Making unit in operation

Ginger paste making machine

Farmers' Produce Processing – cum – Skill Development Center

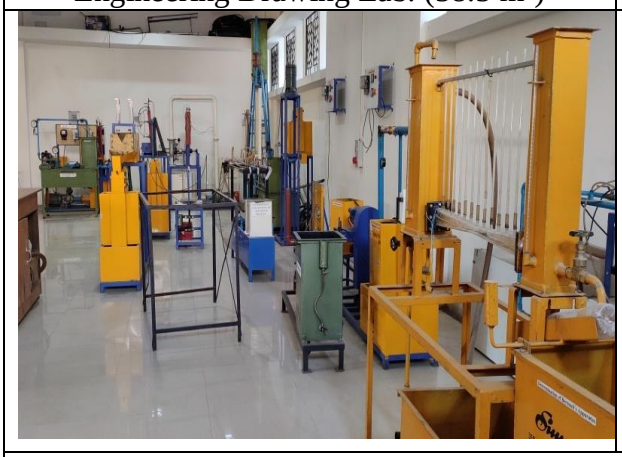


Remote Sensing & GIS Lab. (39 m^2)



Strength of Materials Lab. (81 m^2)

Soil Water Conservation & Soil Mechanics Lab. (135 m^2)

<table>
<tr><td colspan="2">   </td></tr>
<tr><td colspan="2">Applied Mechanics Lab. (105 m^2)</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Engineering Drawing Lab. (58.5 m^2)</td><td>Soil & Water Quality Lab. (40.32 m^2)</td></tr>
<tr><td colspan="2">   </td></tr>
<tr><td colspan="2">Irrigation, Drainage & Fluid Mechanics Lab. (225 m^2)</td></tr>
</table>

Biochemistry/Microbiology/ Agriculture Laboratory

Electronics/ Electrical Engineering Laboratory


Computer laboratory


Physics Laboratory

Annexure 6.5.3.3

ELP Module for B. Tech. Agricultural Engineering and Food Technology B. Tech. Agricultural engineering from year 2015-2020

2015-16 (PFE)

EL Module:

A) Processing of milk and milk products

b) Production of cereal-based extruded product , spices and pine apple

During academic year 2015-2016, seven students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to produce various products such as paneer, ice-cream, turmeric, pasta, ginger powder, osmo-air dehydrated pineapple slices, and orange ginger RTS. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

Fig.11: Stages of operation in ice-cream manufacturing process.

2016-2017 (SWCE)

EL Module:

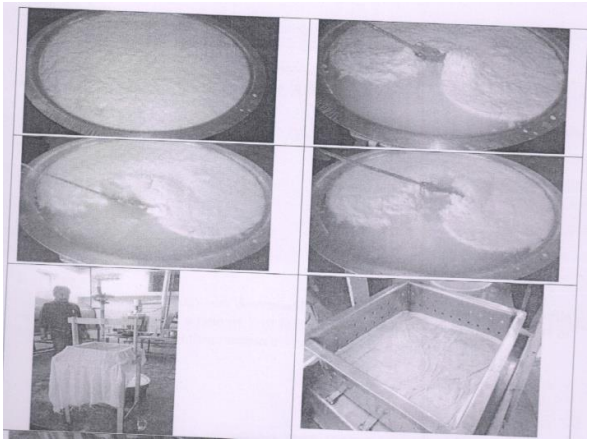
Participatory Rural Appraisal of ChottaSingtam Village

Firstly village mobility, social, resource, technological and bio resource maps were constructed. Information on Indigenous and technological knowledge were also obtained. Concept of Venn diagram was also developed. SWOT analysis and problem identification in village and its ranking were done. Finally action plan was suggested for construction of various soil conservation structures.

2016-17 (PFE)

Processing of milk and milk products and value addition of horticultural crops

During academic year 2016-2017, six students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to produce various products such as churpi, yoghurt and extruded snacks. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.



2017-18 (PFE)

EL Module:

Processing of milk and milk products and value addition of horticultural crops

During academic year 2017-2018, seven students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to produce various products such as paneer, ice-cream, ice-candy, turmeric powder, dried ginger slices, pineapple ginger RTS. In addition they have imparted skills of operation and maintenance of processing equipments,

development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.


2017-2018 (FMPE)

EL Module:

Fabrication of improved farm tools and equipment

Department: Farm Machinery and Power Engineering, CAEPHT, Gangtok

During 2017-18, 5 students of B.Tech. (Agricultural Engineering) final year students of College of Agricultural Engineering and Post Harvest Technology (Central Agricultural University, Imphal) Ranipool, Gangtok CAEPHT were engaged for three months under experiential learning under "fabrication of improved farm tools and equipment" module.

They were assigned to fabricate and sale 5 numbers of animal drawn improved wedge ploughand 4 numbers of improved peg type puddlers. These two implements are gaining popularity among the farmers. The students fabricated these implements at the production cost of Rs 2500/- and Rs 800/- respectively. Out of 9 units fabricated, 4 units were sold to farmers and KVK at selling price of Rs 3500/- and 1000/- respectively.


2017-18 (REE)

EL Module:

Design, Development and Performance Evaluation of Polycarbonate Canopy Solar Tunnel Dryer

During 2017-18, 4 students (Mr. Abhijeet Kumar, Mr. Abhishek Kumar, Mr. Macariush N. Sangma and Mr. Nirmalya Kumar Nath) of B. Tech. (Agricultural Engineering) final year students of College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim were engaged for final semester under experiential learning programme in the Department of Renewable Energy engineering. The solar tunnel dryer is a tunnel like semi cylindrical in shape, poly house made up of acrylic polythene sheet. The capacity is large enough that it can be used to dry 320 kg of ginger and turmeric under controlled environmental conditions. A solar tunnel dryer was designed,

Fabrication and Economy analysis of Solar Tunnel Dryer at the premises of M/s Natures Gift, Rangpo, Sikkim. Solar tunnel dryer was designed for drying of 320 kg of ginger and turmeric with drying period of 15 sunshine hours. Total cost of Rs. 2,50,000 of solar tunnel dryer was borne by M/s Natures Gift, Rangpo, Sikkim. This program has boosted up the confidence of the students due to hands on training and some students have shown positive interest in being an entrepreneur.

Fabricating Solar Tunnel Dryer

Solar Tunnel Dryer installed M/s Natures Gift, Rangpo, Sikkim

2017-18 (IDE)

EL Module:

Title: Installation of Gravity Drip Irrigation System for Small Vegetable Growers

Department of Irrigation & Drainage Engineering

Brief report: Water is an important component for the entire crop production system. About 75% of the global freshwater is used for agricultural irrigation.

Efficient use of available irrigation water is essential for increasing agricultural productivity for the alarming Indian population.

Therefore, hand in hand with technologies for water harvesting and storage, technologies for precision water application methods need to be adopted. Micro-irrigation technology is the most efficient irrigation method available as at present. Micro-irrigation mainly deals with drip and sprinkler irrigation.

Objectives:

1. Installation of gravity drip irrigation system for small vegetable growers
2. To evaluate the field performance of the gravity drip irrigation system.

Materials and Methods

As reviewed earlier, the present study was conducted with installation of gravity feed drip irrigation. The study was conducted in the month of February to May, 2018.

The study area comprises at the college (CAEPHT) area located in the district of East-Sikkim. In the present study was conducted nearby New Girl's Hostel lies between latitude 27°17'23" N to

longitude 88°35'26" E. Gravity drip irrigation system was designed and evaluated for the small area. The components of gravity drip irrigation system are: Storage tank, Main line& Sub-main,Laterals,Drippers,Filter and Fitting accessories

Conclusions: Gravity drip irrigation system was designed for the small area of 100 m² near the new girl's hostel of college of Agricultural Engineering and Post Harvest Technology, Ranipool. Following conclusions were drawn from the study: The Field evaluation of the system were adjudged by the hydraulic performance criteria such as emission uniformity, field application efficiency and the distribution efficiency. The designed gravity drip irrigation system showed the effectiveness in terms of its performance and found to be very suitable for the adoption by the small farmers. The Emission uniformity (Eu) observed to be 93.06 % for the 3 m head with the o % slope. Similarly, Eu varies from 87.47 % to 83.59 % for the 2.5 to 2 m head.

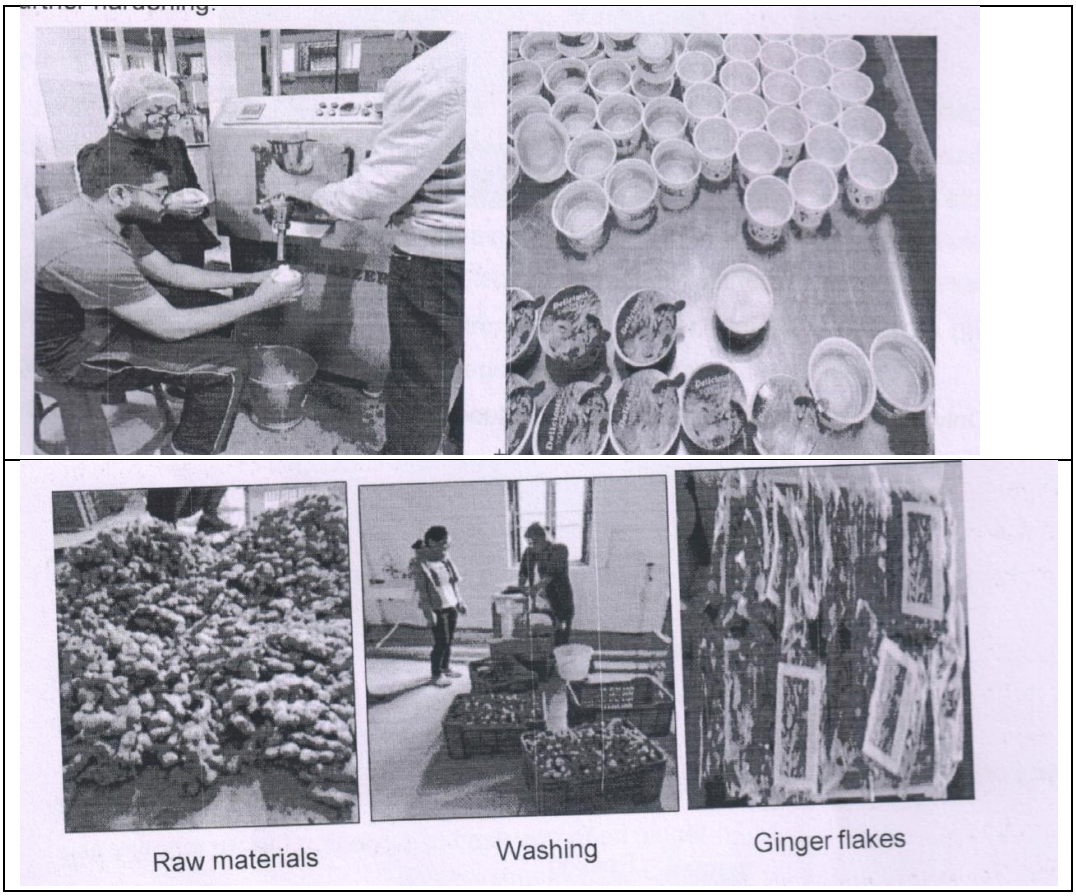
2018-19 (PFE)

EL Module:

a) Processing of milk and milk products

b) Processing and value addition of horticultural crops

During academic year 2018-2019, six students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to produce various products such as paneer, ice-candy, mango ice-candy, turmeric powder, and dried ginger slices. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.



2018-19 (SWCE)

EL Module:

Design and Construction of naturally ventilated polyhouse for organic farming

The objective of this experiential learning unit was to construct naturally ventilated poly house considering the design parameters of ventilation for organic cultivation. The poly house was constructed in a farmers field (Shri. Pratap Thatwal) in Soureni village (Assam Lingzey) located in Jalipool Tehsil of East Sikkim. For designing the green house following consideration were taken into account: Site selection, orientation, structural forms, covering materials, structural frames and water supply. The dimension of the NVP constructed in the farmers field was 24.6 m length and 5.0 m width, with total floor area of 123 sq.m. the provision of ventilation was kept at 2 feet from the surface for all four sides along the full length and breadth. The roof ventilation was also provided for better air-exchange, carbon dioxide replenishment and temperature reduction in the NVP. This naturally ventilated poly house was constructed using bamboo (70 nos) having diameter 91.5mm. This plastic film (UV Protected) sheets 2200 micron was used. The shade nettings were also designed to protect the crops and plants from UV radiations. They also provide protection from changing weather conditions. Beside this zig-zag aluminium wire and aluminium profile were also used for fixing this green house. The ventilation of the NVP was provided at roof top and side(4 sides). The cost of construction of NVP is as follows (Table 1)

Table 1:

Sl. No.	Types of cost	Cost (in Rupees)
1	Labor	10500
2	Plastic Film	17000
3	Miscellaneous	5000
4	Bamboo	21000
	Total	**53500**

The cost per sq. m of the constructed NVP in the farmer's field is found to be about Rs 435.00 per square meter. Thus the low cost bamboo polyhouse constructed in the farmer's field will support the organic mission in Sikkim as the NVP constructed in the farmer's field is being used to cultivate capsicum

Fig. Low cost bamboo polyhouse constructed in the farmer's field

2018-19 (IDE)

EL Module:

Title: Installation, maintenance and hydraulic evaluation of drip irrigation system and development of low cost vertical farming structures

Introduction: Drip irrigation is an artificial application of water to the soil through various systems of pumps, tubes and emitters. It is normally used in areas where rainfall is inconsistent or dry conditions or drought is expected. In drip irrigation water is supplied to the soil surface directly at the plant root zone, drip by drip. Water is applied at frequent and slow application to the soil, near the root zone of the plants through mechanical devices called emitters that are located at selected points along water delivery lines. It is most suitable for row crops (vegetables, soft fruits), tree and vine crops where one or more emitters can be provided for each plant. Generally, only high value crops are considered because of the high capital cost of installing a drip system. It is adaptable to any farmable slope.

Construction of low cost vertical farming structures: This experiment was conducted outside the IDE laboratory. Bamboo was collected from the campus area and brought to the construction site. Three shelves were made on both side of the A shape vertical farming system using binding materials (wire and nail). Field manure was filled on to these shelves and fenugreek was planted. The growth observations for crop was noted daily.



Construction of A shape vertical farming model and fenugreek grown

Conclusion: Two gravity fed drip irrigation system were installed inside the poly-house and in open field near the new library building. Hydraulic evaluation was carried out for both the systems and showed very good performance with minimal head losses.The constructed vertical farming structures using locally available bamboo can effectively be used for the cultivation of close growing leafy vegetables such as fenugreek and coriander etc.

2018-19 (FMPE)

EL Module:

Development of 3D model of farm machinery

Three dimensional model of various farm machinery namelyself-propelled zero till planter, axial flow paddy thresher and power drill operated seed drill cum planter have been developed using CATIA V6 in the year 2018-19 as a part of experiential learning program. The students have imparted the skill of making 3D model of machine components along with the assembly of the components to develop a complete model. The students have also learnt the working mechanism of the machines and are aware of the dimensions, material used, etc. Learning this software will help them in presenting their ideas in an easy and scientific way in their carrier. Figure 1 shows the 3D model of self-propelled zero till planter developed using CATIA V6.

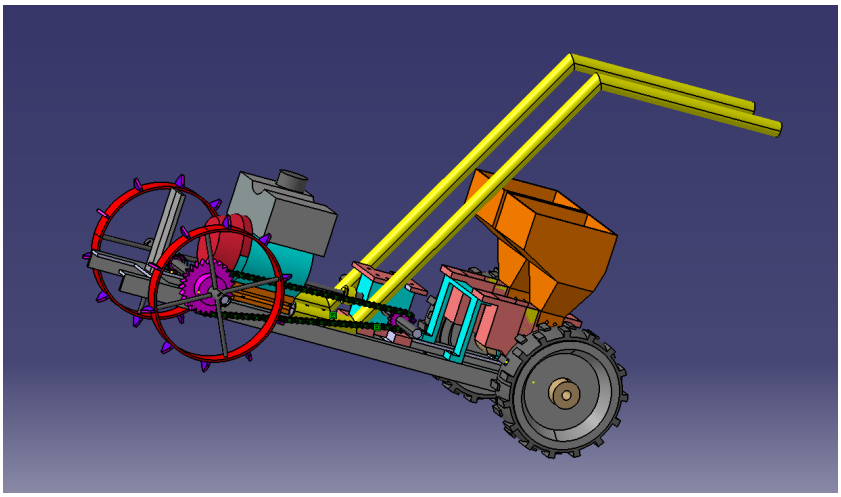


Figure 1. 3D model of self-propelled zero till planter using CATIA V6

2018-19 (REE)

EL Module:

Designed Solar Tunnel Dryer using software CATIA

In this work students have designed a STD using CATIA V5R20 software for different load capacities. According to the different loads, different dimensions have also found by design analysis manually. According to the dimensions, approximate cost operations of the STD was found out to ₹89,257.25 for 150 kg, ₹1,74,104.25 for 300 kg, ₹2,56,694.26 for 450 kg and ₹3,40,922 for 600 kg. Working stability of STD depends on the transparency of the cover materials used. Transparency depends on the radiation receiving outside and inside the STD. In this work, transparency of the material was found to be declining by 60% by the 6th useful years. And it was found by using an equation derived from the transparency-age graph that by the 10th useful year it will not be useful anymore since its transparency will be declining by 50%. Because by the 50%, the heat produced and heat loss will be same.

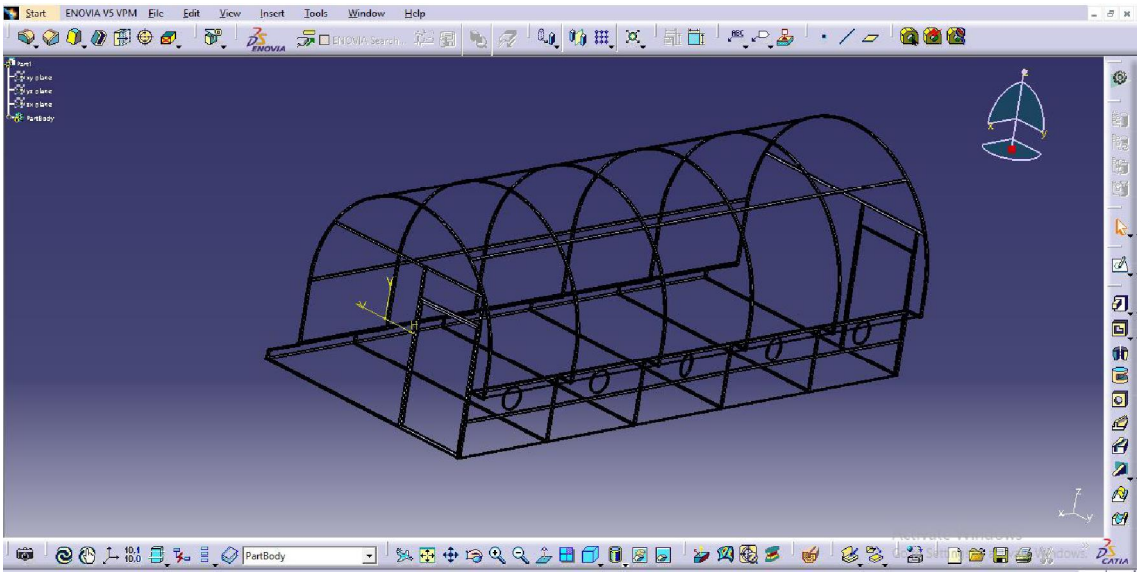


Fig: Complete 3-D structure of a simple STD in a part design with exhaust fans and doors

2019-20 (PFE)

EL Module:

Processing milk and milk products of and value addition of horticultural crops

During academic year 2019-2020, seven students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to produce various products such as paneer, ice-candy, and mango ice-candy,. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

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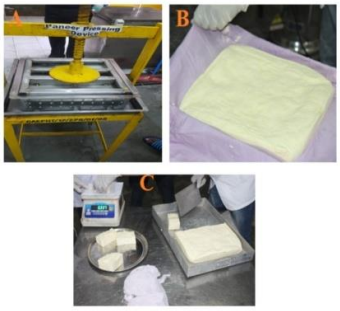
<td>  </td>
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<td colspan="3">2019-20</td>
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2019-20 (SWCE)

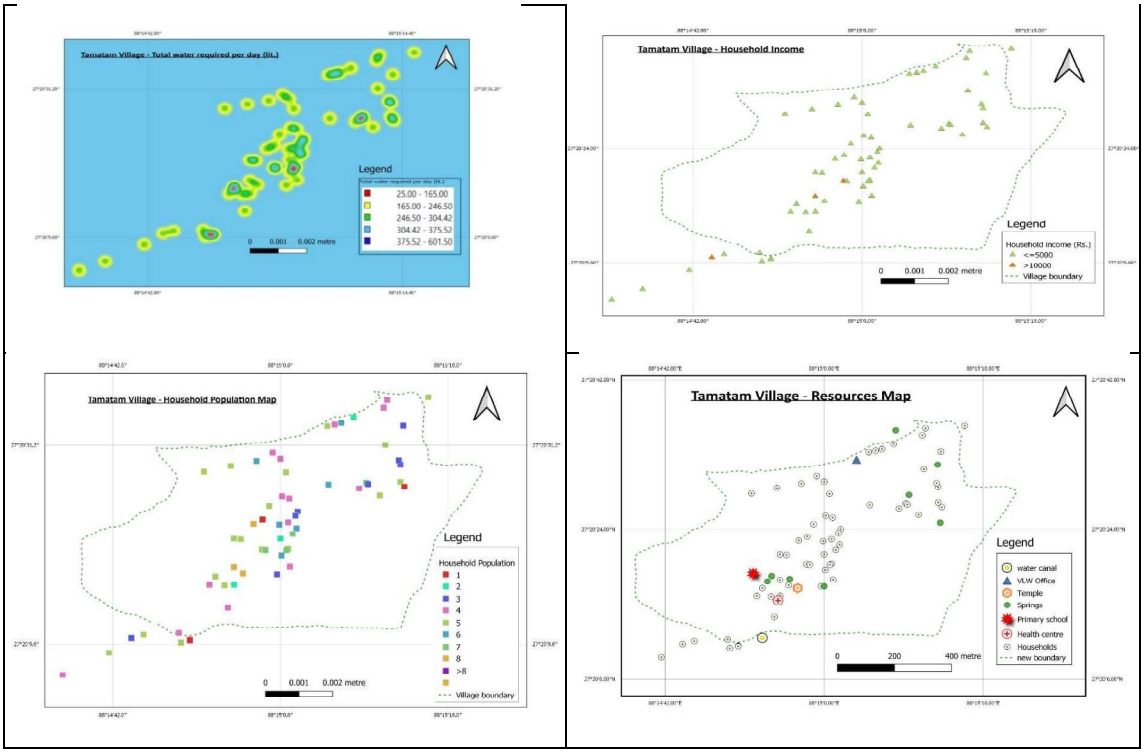
EL Module:

Natural Resource Database Management Using GIS

Objective of this experiential learning was to create resource data base of a village and to study the natural resource conservation and management by local community of Tamatam Village, East Sikkim

Firstly a questionnaire was prepared. Primary and secondary data of the village were collected. Exchange of ideas and awareness generation among the community member of the village regarding conservation of water were made. Water availability and requirement of each house hold were carried out. Using GIS and remote sensing, resource, house hold income and population maps were created. By this study students develops following skills:

- Development of communication skills with village community.
- Preparation of questionnaire.
- Primary data collection related to socio economic and natural resources.
- Idea exchange with the village community on Natural resource management.



2019-20 (FMPE)

EL Module:

Development of idea to 3D model

In the year 2019-20, the students have learned how to conceptualize their ideas and convert into a 3D model. Figure 2 shows the 3D model of a bund digger. The student had an idea of developing a machine which will be suitable for digging or making holes in bund for planting paddy, millets, etc. which is generally practised in Apatani farming system in Arunachal Pradesh. With the help of CATIA V6, he has successfully developed a 3D model of his idea. The developed model is made based on actual dimensions which will be suitable for application in the field. Therefore, it would be easier and time saving while fabricating the machine. To mention, such type of machine has not been developed so far till date. Learning of modelling software like CATIA V6 encourages the students towards innovation.

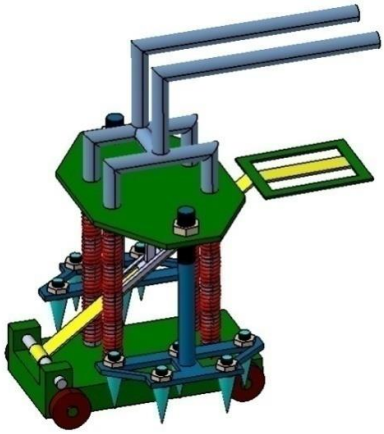


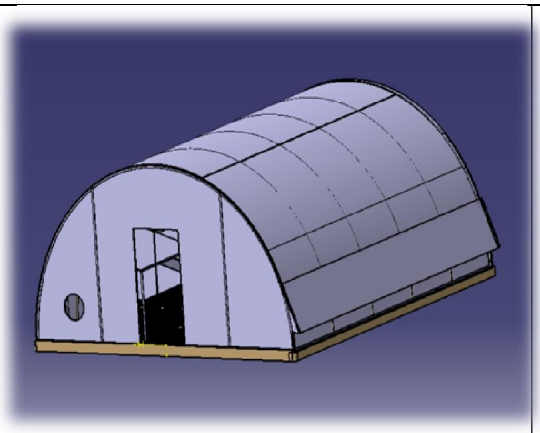
Figure 2. 3D model of a bund digger

2019-20 (REE)

EL Module:

Design, Costing and Depreciation Analysis of Solar Tunnel Dryer (STD)

During 2019-20, 7 students (Ms. Madhu, Ms. Lalthangmawaii, Mr. Bivek Chakma, Ms. HamtoitiReang, Mr. Suvranil Majumdar, Mr.Biswajit Dey and Ms. Rima Das)of B.Tech. (Agricultural Engineering) final year students of College of Agricultural Engineering and Post Harvest Technology, Ranipool, Gangtok, Sikkim were engaged for experiential learning programme within Student Ready of VII semester in the Department of Renewable Energy engineering. The solar tunnel dryer is a tunnel like semi cylindrical in shape, poly house made up of acrylic polythene sheet. The capacity is large enough that it can be used to dry 100 kg of ginger and turmeric under controlled environmental conditions. A solar tunnel dryer was designed, Fabrication and Economy analysis of Solar Tunnel Dryer at the premises of Farmer's house in Soureni Village, Assam Lingzey, Sikkim. Solar tunnel dryer was designed for drying of 100 kg of ginger and turmeric with drying period of 18-24 sunshine hours. The economics of solar dryer has shown significant returns of Rs. 1200 to Rs. 2400 per batch of 100 kg drying of turmeric and ginger respectively.



CATIA Model of STD

Overall length	5.85 m
Overall width	4.05 m
Overall height	2.3 m
Radius of the tunnel	3.048 m
Fam Diameter	0.18 m
Tilt angle of the collector	30° with horizontal
Gap between absorber plate and polycarbonate sheet	0.152 m
Polycarbonate sheet thickness	2 mm
Number of tray layers	2
Number of trays	12

Shape and dimensions of the STD

Construction phase of STD

Loading of ginger peel and Dryer loaded with Ginger




Solar Tunnel Dryer located at Soureni Village

Dryer tray arrangement and absorber polythene for maximize heat trappings

IDE (2019-20)

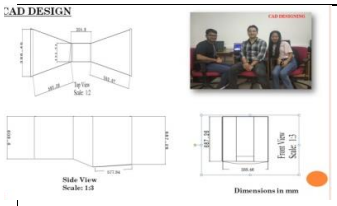
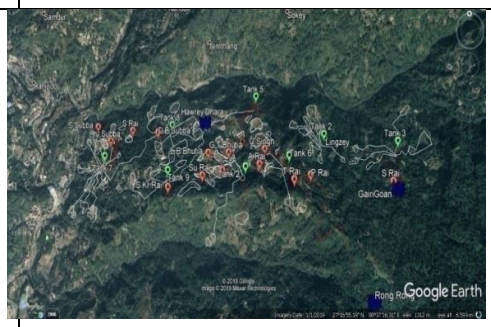
EL Module:

Layout of irrigation system on field and its cost estimation

The present study was conducted as a part of experiential learning programme under the Department of Irrigation and Drainage Engineering, College of Agricultural Engineering & Post Harvest Technology. For this purpose three major objectives were formulated consisting of Fabrication of Parshall Flume, Layout of Irrigation System on field & Cost estimation of the Pipe layout & water storage tanks. Following work was carried out :

1. As per IS 14371:1996, the standard dimensions of a 6-inch (15.24 cm) Parshall flume was fabricated. Students successfully fabricated the discharge measuring device (Parshall Flume) in workshop. Using the fabricated Parhall Flume spring water source discharge was measured at Aho (Ranipool) Village in East Sikkim. The measured water discharge was 0.0004623 □ □/□ for a head of 1.8 cm and 0.0003838 □ □/□ for a head of 1.6 cm.

2. For the same village a study on Geotagging, using GIS was carried out for Irrigation field layout. Cost estimation of pipe layout & tank construction was also carried out.

	
CAD design of Parshal flume	Fabrication of Parshal Flume
	
esigning Of Irrigation Field Layout	Identification Of Water Source & Pipe Layering
Module: Layout of irrigation system on field and its cost estimation	

ELP B. Tech Food Technology from year 2015-2020

During academic year 2015-2016

EL Module: Manufacturing of ice-cream

five students were participated in ELP (Skill module). Students were worked in pilot plant for milk processing and produced ice-cream in several batches. During the module, students achieved skill to produce milk based value added product like ice-cream In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

During academic year 2016-2017

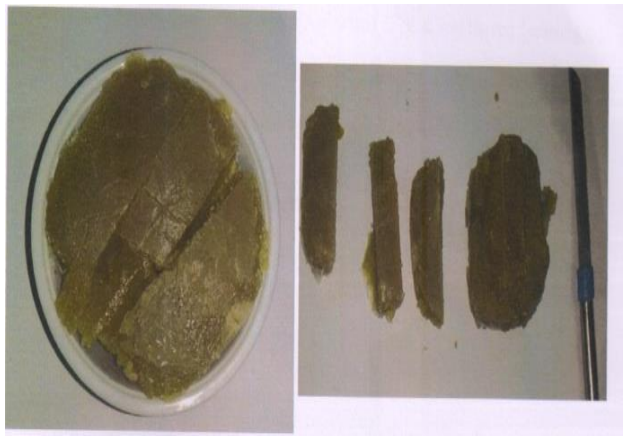
EL Module: Processing of horticultural crops and milk and milk products

nine students were participated in ELP (Skill module). Students achieved skill to formulate and produce papaya candy, squash productions, pickle productions, orange-ginger RTS, strawberry RTS, etc. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

During academic year 2017-2018

EL Module: a) Processing of cereals, b) Processing of horticultural crops, c) Production of bakery products

Six students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to product development and process optimization of ready to eat maize snacks, guava cheese, and various bakery products using various preparation methods. They did proximate composition analysis of the products by using different equipments available in the lab. They also performed cost analysis of the product. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.



During academic year 2018-2019

EL Module: Processing of Milk and value addition of horticultural crops

Ten students were participated in ELP (Skill module). In this module students have successfully learned and achieved skill to product development and process optimization of milk based products such as curd, ice-cream, candy, turmeric powder, dried ginger slices and powder and various bakery products using various preparation methods. They did proximate composition analysis of the products by using different equipments available in the lab. They also performed cost analysis of the product. In addition they have imparted skills of operation and maintenance of processing equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

During academic year 2019-2020

EL Module: Processing of Milk and value addition of horticultural crops

Ten students were participated in two ELP (Skill module). In first module students have successfully learned and achieved skill to product development and process optimization of milk based products such as ice-cream, candy, where as in another module they have acquired skills of production of blended RTS beverage (guava and ginger) and guava jelly turmeric powder. They did proximate composition analysis of the products by using different equipments available in the lab. They also performed cost analysis of the product. In addition they have imparted skills of operation and maintenance of processing

equipments, development of art and science of production and managerial skills under protected environment, skill to develop detailed project proposal to start entrepreneurship. Student also learned and acquired skills of analysis of these products as per FSSAI standards. They also acquired knowledge to register and get licence from FSSAI to start food business.

Annexure: 6.5.5.3

Sports and other Miscellaneous Items

Sl. No.	Name of the items
1	Badminton Racket
2	T.T. BAT
3	Football Pump (Plastic)
4	Ankle wrap
5	Football
6	volleyball
7	Basketball
8	Shin gourd
9	Cricket keeping glove
10	Whistle
11	Cricket gourd
12	Spike nails
13	Football boot (shoes)
14	Cricket bat
15	Anklet
16	Stop watch
17	Measuring tape
18	Javeline
20	Badminton net
21	Carom coin
22	Carom board
23	Running spike shoes
24	Socks
25	Suttle cocks
26	Suttle feather
27	T.t. ball
28	Cricket ball
29	Cricket stump
30	Cricket stump bale
31	Shot put
32	Discuss
33	Clapper
34	Cricket bat grip
35	Football jersey set
36	Ramba
37	Chess board
38	College flag
39	Godrej lock seven levers with key
40	MS SHEET BOS (KIT BOX)
41	FIRST Aid BOX
42	College week Tshirt for green house and red house
43	TT NET
45	Volleyball net
46	Running Torch
47	Basketball
48	Athletic suit

Gymnasium Items

Sl.no	Name of the items	Quantity	Location
1	Hack squat	1	Gym hall (boys hostel)
2	Incline/decline bench pump	2	Gym hall (boys hostel)
3	Steel bars 3 feet 4 feet 5 feet 6feet	 1 2 1 -	Gym hall (boys hostel)
4	E bar (4 feet)	2	Gym hall (boys hostel)
5	Dumbbell (14óõ)	10	Available in girls hostel
6	Dumbbell (14óõ)	5	Available in boys hostel
8	Weights	145 kg	Gym hall (boys hostel)
9	Abdominar	1	Gym hall (boys hostel)
10	6- Station multi gym set	1 set	Gym hall (boys hostel)
11	Home gym set	2	One in Gym hall (boys hostel) and one in girls hostel
12	Jogger (old)	2	One in Gym hall (boys hostel) and one in girls hostel
13	T.T. Board	2	One in Gym hall (boys hostel) and one in girls hostel
14	Jogger (new)	2	One in Gym hall (boys hostel) and one in girls hostel
15	Rowing Machine	1	Gym hall (boys hostel)
16	Gym mirror	2	Gym hall (boys hostel)

Musical Instruments/Items and Audio systems for Cultural activities

Sl no.	Name of the items
1	Guitar, L & C American Series with cord
2	Drum set
3	Keyboard, Roland GW-7
4	Grason electric guitar
5	Zumba
6	Tabla with extra Baya
7	Ahuja Amplifier with the following components TAZ-4000EM Speaker box Column speaker Mics Cordless mic set Tie mic Microphone stand Box stand Audio mixer
8	Speaker set
9	Wire & jack

10	Speaker boxes (SRX-120 DX)
11	SSA-160 amplifier
12	GM0601L Gooseneck microphone
13	GMB-6C Stand
14	AWM-690 VL
15	Conference Microphone unit set (1 amplifier + 14 microphone)
16	Bass Guitar
17	Guitar Acoustic BSB King
18	Digital Audio Workstation
19	Ahuja double hand Microphone
20	Tabla Bira
21	Zoom (guitar)
22	Jack
23	Echo (Wireless microphone)
24	Ahuja (Wired microphone)
25	Drum ball stick
26	Drum snare
27	Adaptor (Keyboard)
28	Extension cord (goldmedal)
29	Ahuja MIC $490V_2$
30	VHF MIC LhV4-32SR
31	Stereo cord
32	Jack metal + plastic
33	9V Battery
34	AA Battery
35	Ahuja Cordless Mic (new)
36	Keyboard cover
37	Lyric stand
38	Keyboard stand
39	Electric string (guitar string)
40	Power strip (extension cord)
41	Intex woofer (4 in 1)-NEW
42	AV CABLE -NEW
43	Audio mixer cable-new
44	wire

Annexure: 6.5.7.3
Faculty Awards

Department of Basic Engineering and Applied Science

Sl. No.	Name of the faculty	Name of the award/ recognition	Awarding organization (place/country)	Year	National/International /Professional society
1	Dr A. B. Sherpa, Assistant Professor (Sr. Scale) of Agronomy	Nil	Nil	Nil	Nil
2	Dr Dhananjoy Roy, Assistant Professor (Sr. Scale) of English	Nil	Nil	Nil	Nil
3	Er.Nandita Sen Asst.Professor(Electrical Engg.)	Nil	Nil	Nil	Nil
4	Phuritshabam Robert, Assistant Professor, (Computer Science & Engineering) Currently Pursuing PhD.	Nil	Nil	Nil	Nil
5	Dr. Chakpram Birendrajit Assistant Professor (Soil Science)	Nil	Nil	Nil	Nil
6	Dr. Abujam Anuradha Devi, Assistant Professor (ABM)	Awarded Best Paper presentation for the paper entitled as **Horti-Business Opportunities for livelihood security in**	In Regional Seminar of The Indian Society of Agricultural Economics (ISAE) on ñ**Perspectives of Horti-Business Development in North East Region"** during 24-25 February, 2020, organized by College of Horticulture & Forestry, CAU, Pasighat, co-organized by NABARD-Itanagar	2020	The Indian Society of Agricultural Economics (ISAE)

		Sikkimò	& in association with ICAR-ATARI, Guwahati and Rajiv Gandhi University, Itanagar		
7	Er. Rajiv Pradhan, Assistant Professor (Electronics Engineering & Instrumentation)	Nil	Nil	Nil	Nil
8	Dr. Srikanta Kumar Meher Assistant Professor (Mathematics)	Nil	Nil	Nil	Nil
9	Smt.T. Loidang Chanu,Assistant Professor ,Statistics	Nil	Nil	Nil	Nil
10	**Dr. Sushma Gurumayum, Assistant Professor**	Nil	Nil	Nil	Nil
11	Dr. Ph. Baleshwor Sharma, Assistant Professor (Biochemistry)	NA	NA	NA	NA

Department of Farm Machinery and Power Engineering

Sr. No.	Name of the faculty	Name of the award/recognition	Awarding organization (place/country)	Year	National/international/professional society
1	Dr. NS Chauhan	The Institution of Engineers (India)	Fellow	2014	Professional Society
2	Dr. S N Yadav	Nil	Nil	Nil	Nil
3	Dr. S.K. Satpathy	Canadian Common Wealth Scholarship	University of Saskatchewan, Saskatoon, Canada	2013	Canadian Bureau for International Education
		Winner, Oral	University of Saskatchewan,	2013	The Canadian Society for

		presentation	Saskatoon, Canada		Bioengineering
		Master Trainer for the job role of Tractor operator	Agricultural Skill Council of India, National Skill Development Corporation, Govt. of India, New Delhi	2018	-
		Innovation Ambassador	Institutional Innovation Council, MHRD, New Delhi, India	2019	-
4	Shankar Swarup Das (Assistant Professor)	College of Agricultural Engineering and Post-Harvest Technology, Ranipool	Best paper award for oral presentation at ICMMRE-2019 conference at SMIT Sikkim	2019	---
5	Sujeet Kumar Chauhan (Assistant Professor)	Nil	Nil	Nil	Nil
6	Ngangkham Devarani (Assistant Professor)	Nil	Nil	Nil	Nil

Department of Processing and Food Engineering

SL. No.	Name of the faculty	Name of the award/Recognition	Awarding organization	Year	National/International/Professional Society
1.	Dr. R P Misra Professor	Rafi Ahmed Kidwai Memorial Award for Agricultural Research for the Trienium 1996-98	Indian Council of Agricultural Research	1999	National
2.	Dr Sujata Jena Associate Professor	Third prize in poster presentation in	*ICFOST-2005*, 17th Indian Convention of Food Scientists and Technologists Association of Food	2005	Professional society

			Scientists and Technologists, India		
3.	Dr B K Singh Assistant Professor	-	-	-	
4	Dr Said P. P. Assistant Professor	First prize for paper presentation	International Conference on Global Scenario of Traditional System of Medicine, Ayurveda, Agriculture and Education-2013	2014	Professional society
		First prize for paper presentation	International Conference on Global Scenario of Traditional System of Medicine, Ayurveda, Agriculture and Education-2013	2014	Professional society
5.	Dr. Rakesh Kumar Raigar Assistant Professor (Dairy Engineering)	• Gandhian Young Technological Innovation (GYTI) Award. • Young scientist Award	Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI). Ahmedabad Gujrat	2018	National
			National Extension Education Congress-2018 by Society of Extension Education, Agra on ñClimate Smart Agricultural Technologies: Innovations and Interventionsò to be held at CAPHET, Ranipool, Sikkim	2018	National

Sl.No.	Name of the faculty	Name of the award/ recognition	Awarding organization (place/country)	Year	National/International /Professional society
1	Dr. Deepak Jhajharia, Professor	Fellow (Indian Association of Hydrologist) Distinguished Alumni Award Young Scientist Award Best Extension Scientist Award (AICRP-PET) Fellow (Indian Water Resources Society, Roorkee) Best paper award by Society of Extension Education, Agra Life membership of Extension Society of India	NIH Roorkee, Uttarakhand CTAE (MPUAT), Udaipur, Rajasthan Society of Extension Education, Uttar Pradesh ICAR-CIPHET, Ludhiana, Punjab Roorkee, Uttarakhand Society of Extension Education, Uttar Pradesh -do-	2015 2016 2018 2018 2019 2018 2018	Indian Association of Hydrologist, Roorkee Alumni Society of CTAE, Udaipur Society of Extension Education, Agra ICAR-CIPHET, Ludhiana, Punjab Indian Water Resources Society, Roorkee Society of Extension Education, Agra -do-
2	Dr. Jagabandhu Panda, Associate Professor	N. A.	-	-	-
3	Dr. Santosh Rangrao Yadav, Assistant Professor	-	-	-	-
4	Dr. Ghanashyam Singh Yurembam, Assistant Professor	-	-	-	-

Department of Irrigation and Drainage Engineering

S. No.	Name of the faculty	Name of the award/ recognition	Awarding organization (Place/ Country)	Year	National/ International/ Professional Society
1	Dr. B C Kusre	Nil	-	-	-
2	Dr. Ajay Kumar	1. Fourth Dr. H. K. Jain-CAU Award in Agricultural	CAU Imphal, Manipur,	2019	National

	Vashisht	Sciences for Excellence in Agricultural Research in the North-Eastern States of India for the biennium 2017-18	India		
		2. ISAE Commendation Medal for the year 2018 for Professional Achievements in the field of Soil and Water Engineering	Indian Society of Agricultural Engineers (ISAE), New Delhi, India	2019	Professional Society
3	Dr.Ghanshyam T. Patle	1. Young Scientist Award	Society of Extension Education, Agra, India--	2018	Professional Society
		2. Distinguished Service Certificate Award	Indian Society of Agricultural Engineers (ISAE), New Delhi, India	2016	Professional Society
		3. Certificate of Appreciation award	ICAR-NRC for Orchids, Sikkim, India	2017	National Institute
		4. Best Paper Award	Society of Ornamental Horticulture, New Delhi	2018	Professional Society
		5. Best paper presentation Award- 2018	Society of Extension Education, Agra, India	2018	Professional Society
4	Dr. Shivam	Nil	-	-	-

Department of Renewable Energy Engineering

Sl. No.	Name of the faculty	Name of the Award/ Recognition	Awarding Organization (Place/country)	Year	National/International/Professional Society
1	Prof. Mahendra S. Seveda Professor and Head-REE	Distinguished Alumni (Academic) Award	CTAE Alumni Society, College of Technology and Engineering, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India	2020	Professional Society
		Best Paper Award	Central Agricultural University, Imphal, Manipur, India	2020	National
		ISAE Commendation Medal Award	Indian Society of Agricultural Engineers, New Delhi, India	2019	Professional Society
		Fellow Award	Society of Extension Education, India	2018	Professional Society
		Best Paper Award	Society of Extension Education, India	2018	Professional Society
		Young Scientist Award	Society of Extension Education, India	2017	Professional Society

		Best Paper Award	Society of Extension Education, India	2017	Professional Society
2	S M Kamaruzzaman Assistant Professor	--	--	--	--
3	Dr. Narale Pradip Digambar Assistant Professor	Pradip Pimpley ENERTIA award for idea innovation by student in the academic institution.	ENERTIA Foundation, Mumbai, India.	2013	Professional Society.
4	Dr. Kharpude Sudhir Narayan Assistant Professor	--	--	--	--