Faculty of Technology

Annual Report

2017-18

Uttar Banga Krishi Viswavidyalaya
Pundibari, Cooch Behar,
West Bengal-736165

A. Background:

In the year 2005, the Faculty of Technology started its journey as the third faculty of Uttar Banga Krishi Viswavidyalaya with the approval of All India Council of Technical Education (AICTE), New Delhi and Director of Technical Education, Govt. of West Bengal. The faculty offers four year B. Tech. degree in Agricultural Engineering. The curricula of Agricultural Engineering education integrate engineering and agricultural science to improve productivity of agricultural and horticultural crops through efficient utilization of natural resources and conserving the same for future use.

The syllabus of B.Tech in Agricultural Engineering course is based on the advances in the relevant field and guidelines framed by Indian Council of Agricultural Research (ICAR) and are approved by All India Council of Technical Education (AICTE). The U.G. course of Agricultural Engineering comprises of various disciplines like Agricultural Science, Basic Science and Humanities, Computer Science and Engineering, Civil Engineering, Mechanical Engineering, Electrical Engineering, Social Sciences, Farm Power and Machinery, Soil and Water Engineering, and Processing and Food Engineering. The Faculty has the provision of five academic departments namely, (i) Department of Basic Science & Humanities, (ii) Department of Basic Engineering, (iii) Department of Farm Machinery and Power, (iv) Department of Process and Food Engineering, and (v) Department of Soil and Water Conservation Engineering.

B. Functions:

Our vision:

- To contribute to the northern region of West Bengal through excellence in education research and application in the fields of agricultural engineering and technology.
- To serve as a valuable resource for technologies involved in agriculture and to become a source of pride through valuable contributions to the people and the society.
- To create a strong and intelligent UBKV family with full of enthusiastic technocrats.

Our Mission:

- To mould ourselves into a learning community where we work, listen and respect each other.
- To create an environment, where faculties, researchers and students can work synergistically across disciplinary boundaries.
- To undertake several collaborative interdisciplinary research projects, which can provide long term benefits in the areas of academics, rural agriculture and several technological aspects of agriculture such as: Agricultural water management, Small scale food processing, and Farm mechanization.
- To develop a sustainable system with strong interactive connections among the faculty, researchers, students and farmers, by providing need based technological outputs to the agricultural society.

- The faculty aims to serve as a technological hub for engineering applications in the fields of agriculture through academics, research and extension.

C. Teaching:

a) Undergraduate courses:

i) As per the guidelines of the 4th Deanôs Committee:

Semester – I			
Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Engineering Mathematics - I	MTH 101	3(2+1*)
2.	Engineering Physics	PHY 101	3(2+1)
3.	Engineering Chemistry	CHM 101	3(2+1)
4.	Workshop Practice	ME 101	1(0+1)
5.	Surveying and Leveling	CE 101	3(1+2)
6.	Engineering Drawing	CE 102	2(0+2)
7.	Environment Science	ES 101	3(3+0)
8.	Electrical Circuits	EE 101	3(2+1)
9.	English and Communication Skills	ENG 101	3(2+1)

Total 24(14+10)

Semester – II			
Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Engineering Mathematics ï II	MTH 151	3(2+1*)
2.	Computer Programming and Data Structures	CSE 151	3(1+2)
3.	Applied Electronics and Instrumentation	EE 151	3(2+1)
4.	Agricultures for Engineers	AG 151	3(2+1)
5.	Workshop Technology	ME 151	3(1+2)
6.	Thermodynamics & Heat Engines	ME 152	4(3+1)
7.	Field operation and Maintenance of Tractors and Farm Machinery-I	FMP 151	1(0+1)
8.	Engineering Mechanics	CE 151	3(2+1)

Total 23(13+10)

Semester – III			
Sl. No.	**Subject**	**Course No.**	**Credit**

1.	Engineering Properties of Biological Materials and Food Quality	PFE 201	3(2+1)
2.	Soil Mechanics	CE 201	3(2+1)
3.	Soil & Water Conservation Engineering	SWC 201	3(2+1)
4.	Farm Machinery and Equipment ï I	FMP 201	3(2+1)
5.	Farm Power	FMP 202	3(2+1)
6.	Watershed Hydrology	SWC 202	3(2+1)
7.	Engineering Mathematics - III	MTH 201	3(2+1*)
8.	Agribusiness Management and Trade	ECO 201	3(3+0)

Total 24(17+7)

Semester – IV			
Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Farm Machinery and Equipment ï II	FMP 251	3(2+1)
2.	Irrigation Engineering	SWC 251	4(3+1)
3..	Crop Process Engineering	PFE 251	3(2+1)
4.	Fluid Mechanics	CE 251	3(2+1)
5.	Theory of Machines	ME 251	3(2+1)
6.	Heat and Mass Transfer	ME 252	2(2+0)
7.	Field Operation and Maintenance of Tractors and Farm Machinery ï II	FMP 252	2(1+1)
8.	Advance Computer Science & Engineering	CSE 251	2(0+2)
9.	Fundamentals of Probability and Statics	MTH 251	2(2+0)

Total 24(16+8)

Semester – V			
Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Machine Drawing and Computer Graphics	ME 301	3(2+1)
2.	Machine Design	ME 302	3(2+1)
3.	Dairy & Food Engineering	PFE 301	3(2+1)
4.	Tractor Systems and Controls	FMP 301	3(2+1)
5.	Electrical M/Cõs and Power Utilization	EE 301	3(2+1)
6.	Database Management and Internet Applications	CSE 301	2(0+2)
7.	Strength of Materials	CE 301	3(2+1)
8.	Ground Water, Wells and Pumps	SWC 301	3(2+1)

Total 23(14+9)

Semester – VI			
Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Agricultural Structures and Environmental Control	CE 351	3(2+1)
2.	Drying and Storage Engineering	PFE 351	4(3+1)
3.	Design of Structures	CE 352	3(2+1)
4.	Drainage Engineering	SWC 351	2(1+1)
5.	Soil & Water Conservation Structures	SWC 352	3(2+1)
6.	Refrigeration and Air conditioning	PFE 352	3(2+1)
7.	Entrepreneurship Development	EXT 351	1(1+0)
8.	Renewable Energy Sources	FMP 351	3(2+1)

Total 22(15+7)

Semester – VII

Sl. No.	**Subject**	**Course No.**	**Credit**
1.	PROJECT I	PRJ 401	3(0+3)
2.	SEMINER	SEM 401	1(0+1)
3.	In Plant/Industrial Training I	TRN 401	4(0+4)

Student will have to take minimum of **15 credits** courses from the following

Sl. No.	**Subject**	**Course No.**	**Credit**
1.	Food Packaging Technology	PFE 401	3(2+1)
2.	Design & Maintenance of Green House	PFE 402	3(2+1)
3.	Waste and By-Product Utilization	PFE 403	2(1+1)
4.	Development of Processed Products & Equipments	PFE 404	3(2+1)
5.	Food Processing Plant Design and Layout	PFE 405	2(1+1)
6.	Micro Irrigation Systems Design	SWC 401	3(2+1)
7.	Watershed Planning and Management	SWC 402	3(2+1)
8.	Minor Irrigation & Command Area Development	SWC 403	3(2+1)
9.	Environmental Engineering	CE 401	3(2+1)
10.	Gulley & Ravine Control Structures	SWC 404	3(2+1)
11.	Remote Sensing & GIS Applications	SWC 405	3(2+1)
12.	Reservoir & Farm Pond Design	SWC 406	3(2+1)
13.	Tractor Design & Testing	FMP 401	3(2+1)
14.	Hydraulic Drive & Controls	FMP 402	3(2+1)
15.	Farm Power & Machinery Management	FMP 403	3(2+1)
16.	Renewable Energy Technology	FMP 404	3(2+1)
17.	Human Engineering & Safety	FMP 405	3(2+1)
18.	Biomass Management for fodder & Energy	FMP 406	3(2+1)
19.	Production Technology of Agricultural Machinery	FMP 407	3(2+1)
20.	Mechanics of Tillage and Traction	FMP 408	3(2+1)
21.	System Engineering	MTH 401	3(3+0)

Total 23

Semester – VIII:

Sl. No.	Subject	Course No.	Credit
1.	PROJECT II	PRJ 451	3(0+3)
2.	Practical Training at institution/University	TRN 451	17 (0+17)
3.	In Plant/Industrial Training ï II **	TRN 452	4 (0+4)

Total 24(0+24)

* Tutorial class of two periods

Grand Total = (24 + 23 + 24 + 24 + 23 + 22 + 23 + 24) = 187 Credits

ii) As per the guidelines of the 5th Deanôs Committee (Started from Academic Year 2016-17)

Semester I			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Engineering Mathematics-I	MTH 101	3(2+1)
2.	Engineering Physics	PHY 101	3(2+1)
3.	Engineering Chemistry	CHM 101	3(2+1)
4.	Principles of Soil Science	AG 101	3(2+1)
5.	Surveying and Levelling	CE 101	3(1+2)
6.	Engineering Mechanics	CE 102	3(2+1)
7.	Engineering Drawing	ME 101	2(0+2)
8.	Auto CAD Applications	ME 102	2(0+2)
Total Credit Hours			**22(11+11)**

Semester II			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Engineering Mathematics-II	MTH 151	3(2+1)
2.	Environmental Science and Disaster Management	HOR 151	3(2+1)
3.	Principles of Horticultural Crops and Plant Protection	HOR 152	2(1+1)
4.	Entrepreneurship Development and Business Management	AG 151	3(2+1)
5.	Principles of Agronomy	AG 152	3(2+1)
6.	Fluid Mechanics and Open Channel Hydraulics	CE 151	3(2+1)
7.	Workshop Technology and Practices	ME 151	3(1+2)
8.	Communication Skills and Personality Development	ENG 151	2(1+1)
Total Credit Hours			**22(13+9)**
Semester III			

Semester II			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Soil and Water Conservation Engineering	SWC 201	3(2+1)
2.	Watershed Hydrology	SWC 202	2(1+1)
3.	Tractor and Automotive Engines	FMP 201	3(2+1)
4.	Fundamentals of Renewable Energy Sources	FMP 202	3(2+1)
5.	Web Designing and Internet Applications	CSE 201	2(1+1)
6.	Engineering Mathematics-III	MTH 201	3(2+1)
7.	Soil Mechanics	CE 201	2(1+1)
8.	Strength of Materials	CE 202	2(1+1)
9.	Electrical Machines and Power Utilization	EE 201	3(2+1)
Total Credit Hours			**23(14+9)**

Semester IV			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Building Construction and Cost Estimation	CE 251	2(2+0)
2.	Theory of Machines	ME 251	2(2+0)
3.	Heat and Mass Transfer	ME 252	2(2+0)
4.	Agricultural Structures and Environmental Control	PFE 251	3(2+1)
5.	Farm Machinery and Equipment-I	FMP 251	3(2+1)
6.	Renewable Power Sources	FMP 252	3(2+1)
7.	Irrigation Engineering	SWC 251	3(2+1)
8.	Sprinkler and Micro Irrigation Systems	SWC 252	2(1+1)
Total Credit Hours			**20(15+5)**

Skill Development Training-I Summer break June-July after 4th Semester (Student READY)*

Semester V			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Tractor Systems and Controls	FMP 301	3(2+1)
2.	Farm Machinery and Equipment-II	FMP 302	3(2+1)
3.	Tractor and Farm Machinery Operation and Maintenance	FMP 303	2(0+2)
4.	Engineering Properties of Agricultural Produce	PFE 301	2(1+1)
5.	Post Harvest Engineering of Cereals, Pulses and Oil Seeds	PFE 302	3(2+1)
6.	Dairy and Food Engineering	PFE 303	3(2+1)
7.	Groundwater, Wells and Pumps	SWC 301	3(2+1)
8.	Watershed Planning and Management	SWC 302	2(1+1)
9.	Machine Design	ME 301	2(2+0)
10.	*Skill Development Training-I (Student READY) Registration and Evaluation only	TRN 301	5(0+5)
Total Credit Hours			**28(14+14)**

Semester VI			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Design of Structures	CE 351	2(1+1)
2.	Computer Programming and Data Structures	CSE 351	3(1+2)
3.	Thermodynamics, Refrigeration and Air Conditioning	PFE 351	3(2+1)
4.	Post Harvest Engineering of Horticultural Crops	PFE 352	2(1+1)
5.	Drainage Engineering	SWC 351	2(1+1)
6.	Water Harvesting and Soil Conservation Structures	SWC 352	3(2+1)
7.	Bio-energy Systems: Design and Applications	FMP 351	3(2+1)
8.	Applied Electronics and Instrumentation	EE 351	3(2+1)
Total Credit Hours			**21(12+9)**

Skill Development Training-II in Summer break June-July after 6th Semester (Student READY)

VII Semester
Student READY (Rural and Entrepreneurship Awareness Development Yojana)

VII Semester **Student READY (Rural and Entrepreneurship Awareness Development Yojana)**			
Semester VII			
S. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	10- weeks Industrial Attachment /Internship (Student READY)	TRN 401	10(0+10)
2.	10- weeks Experiential Learning On campus (Student READY)	TRN 402	10(0+10)
3.	Skill Development Training-II (Student READY) Registration and Evaluation only	TRN 403	5(0+5)
4.	#Educational Tour (Registration only)	EDT 401	2 (0+2)
Total Credit Hours			**27(0+27)**

#Educational tour during winter/January break

VIII Semester **Student READY (Rural and Entrepreneurship Awareness Development Yojana)**		
Semester VIII		
Title of the Course	**Course No.**	**Credit Hour**
Elective course	To be offered	3(2+1)
Elective course	To be offered	3(2+1)
Elective course	To be offered	3(2+1)
Project Planning and Report Writing (Student READY)	PRJ 499	10(0+10)
Total Credit Hours		**19(6+13)**

Grand Total = (22+22+23+20+28+21+27+19) = 182 Credit Hours

Elective Courses			
Sl. No.	**Title of the Course**	**Course No.**	**Credit Hour**
1.	Floods and Control Measures	(SWC 451)	3 (2+1)
2.	Wasteland Development	(SWC 452)	3(2+1)
3.	Information Technology for Land and Water Management	(SWC 453)	3 (2+1)
4.	Remote Sensing and GIS Applications	(SWC 454)	3 (2+1)
5.	Management of Canal Irrigation System	(SWC 455)	3 (2+1)
6.	Minor Irrigation and Command Area Development	(SWC 456)	3 (2+1)
7.	Precision Farming Techniques for Protected Cultivation	(HOR 451)	3 (2+1)
8.	Water Quality and Management Measures	(CE 451)	3 (2+1)
9.	Landscape Irrigation Design and Management	(SWC 457)	3 (2+1)
10.	Plastic Applications in Agriculture	(SWC 458)	3 (2+1)
11.	Mechanics of Tillage and Traction	(FMP 451)	3 (2+1)
12.	Farm Machinery Design and Production	(FMP 452)	3 (2+1)
13.	Human Engineering and Safety	(FMP 453)	3 (2+1)
14.	Tractor Design and Testing	(FMP 454)	3 (2+1)
15.	Hydraulic Drives and Controls	(FMP 455)	3 (2+1)
16.	Precision Agriculture and System Management	(FMP 456)	3 (2+1)
17.	Food Quality and Control	(PFE 451)	3 (2+1)
18.	Food Plant Design and Management	(PFE 452)	3 (2+1)
19.	Food Packaging Technology	(PFE 453)	3 (2+1)
20.	Development of Processed Products	(PFE 454)	3 (2+1)
21.	Process Equipment Design	(PFE 455)	3 (2+1)
22.	Photovoltaic Technology and Systems	(EE451)	3 (2+1)
23.	Waste and By-Products Utilization	(PFE 456)	3 (2+1)
24.	Artificial Intelligence	(CSE 451)	3 (3+0)
25.	Mechatronics	(ME 451)	3 (2+1)

b) Post graduate courses: NIL

ii) Studentsô Achievement:

GATE:

- 04 out of 08 passed out students (2015)
- 05 out of 14 passed out students (2016)
- 02 out of 18 passed out students (2017)

- 08 out of 16 passed out students (2018)

iv) Studentsô Placement:

Total 07 students placed in 2017-18.

D. Research Activity:

a) Areas of research : Irrigation water management, collective farming practice
b) Research reports submitted : NIL
c) Awards and gold medals : NIL
d) Scholarships, stipends and fellowships :

Year	Name of the Scholarship	Number of Students Benefitted
2015	University Free Studentship	07
	West Bengal Full Freeship	06
	West Bengal Half Freeship	01
	University Merit Scholarship	11
	Stipend	01
	NTS	02
2016	University Free Studentship	07
	West Bengal Full Freeship	10
	West Bengal Half Freeship	09
	University Merit Scholarship	06
	NTS	01

e) Ongoing research projects :

ñImproving water use for dry season agriculture by marginal and tenant farmers in the Eastern Gangetic Plainsò

- A multi-country (Nepal, India and Bangladesh) and multi-institutional project to be funded by the Australian Centre for International Agriculture Research (ACIAR) and the International Water Management Institute (IWMI) will be the implementing institution.

Principal Investigator (PI): Dr. Rupak Sarkar

E. Extension activities:

i) Promotion of collective farming practice among marginal and tenant farmer groups in dry season agriculture through efficient utilization of irrigation water
ii) Interaction with the farmers and demonstration of farm equipments during ó*krishi mela*ô
iii) Providing skill development training to the farmers

F. Infrastructural and Support Facilities available:

Specialization: Farm Machinery and Power

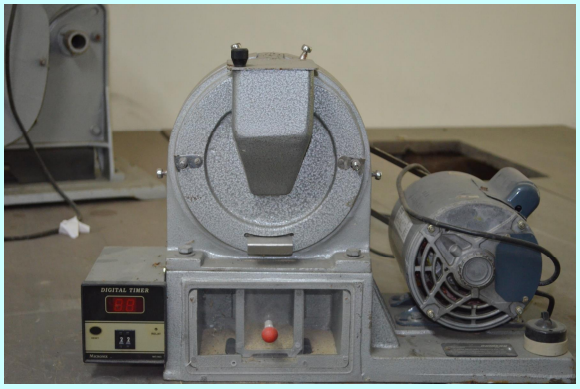
Farm machinery and power Laboratory lab has three numbers of modern tractor and two power tiller. Mechanical workshops with basic infrastructure facility are also associated with this lab for repair and maintenance of farm equipments. Farm machinery and power lab is well equipped with various farm implements and equipments.

- Various primary and secondary tillage implements, earth working equipment, land leveler, trencher, soil pulverizer, puddler, etc.
- Different types of sowing, planting, and transplanting equipments, eg, seed drills, Potato planters, sugarcane planter etc.
- Inter-cultivation equipment eg, hand hoes, wheel hoes, weeders, cultivators, sprayers, dusters etc.

- Harvesting tools and machines, like sickles, vertical conveyor reaper windrowers, threshers, winnowers, shellers, & decorticators
- Educational model of 4- stroke & 2-stroke cycle engines, Engine overhauling platform, tractor drive train, clutch ï parts, gear box, differential & final drive, brake systems.
- Model of various tractor systems like, steering, hydraulic, hitching, PTO drive, ballasting, hydraulic trailer
- Solar energy gadgets & appliances; air heaters, water heating system, solar cookers, Solar PV systems, solar lantern, solar fan, and biogas (models).

Specialization: Process and Food Engineering

Processing and Food Engineering (PFE) laboratory is equipped with instruments like hot air oven, microwave oven, grain sheller & polisher, grain flour separator, etc. It serves as a unit for conducting practical classes of various courses. Students use the lab facilities for conducting experiments related to their project works and for developing several processed food products in hands on training program.



Some of the important facilities available in PFE laboratory:

1. Drying.
2. Grain shelling and polishing.

3. Separation of wheat flour in different grades.
4. Preparation of bakery products, fruit juice, etc.
5. Preparation of carbonated beverages

Specialization: Soil and Water Conservation Engineering

- Field laboratory is available for practical demonstration of drip and sprinkler irrigation systems, centrifugal pump, submersible pump, current meter (model), hydraulic ram (model), weirs, flumes, venture, orifice, water meter etc.





- Hydrology and soil conservation laboratory has the instruments like pan evaporimeter, infiltrometer, rain gauge, EC meter, pH meter etc. There is a

meteorological observatory in the campus where the students are given practical exposure.

- There are other instruments like water level indicator, pressure plate apparatus, tensiometer, GPS etc. available in the faculty

Specialization: Civil Engineering

Laboratory facilities available:

- Soil mechanics laboratory
- Surveying and leveling laboratory
- Engineering drawing laboratory

Additionally the faculty has Autocad computation facility, equipments related to structural engineering, soil permeability apparatus, water quality testing kit, and equipments related to fluid mechanics.

Specialization: Mechanical Engineering

The mechanical workshop under Faculty of Technology undertakes various jobs related to the manufacturing, repairing, and up-gradation of mechanical systems existing in the University. The workshop is equipped with modern machineries like lathe, milling, and shaping machines. There are also units like carpentry, welding, and casting to assist in different manufacturing and repairing processes.

Some Facilities available in the Workshop:

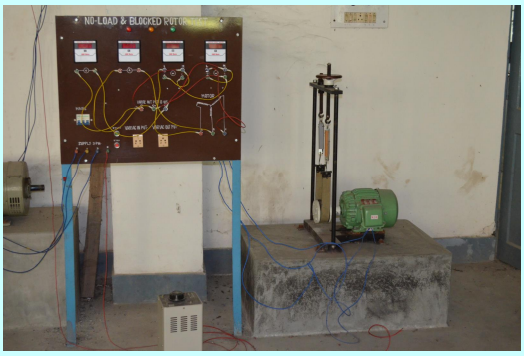
1. Hands-on training for all the undergraduate students.
2. The engineering performed in the mechanical workshop focuses on manufacturing different tools, machine parts, and laboratory equipments.
3. Practical demonstration of various manufacturing processes to enhance the practical knowledge of the students.
4. Students hone their manufacturing skills through different jobs
5. Assistance in design and manufacturing of customized tools /equipments /machines as may be required in various projects

Specialization: Computer Science and Engineering

The computational facilities available in the laboratory aim to give the students an opportunity for practical learning for better understanding of the basic concepts and constructs of computer programmes.

- Two dedicated computer laboratories are available exclusively for the students
- Twenty five computers are available in the basic computer laboratory and fifteen computers are present in the advanced computation laboratory
- All computers are connected through the 1 GBPS LAN connectivity of the University. The laboratory also has access to the Wireless network. There are two separate computational laboratories dedicated to basic and advanced learning modules.

Specialization: Electrical Engineering



- Electrical Engineering laboratory is equipped with all the instruments required for the instruction of undergraduate students
- Electronics laboratory has the necessary instruments for conducting the practical classes

Specialization: Basic Science and Humanities

Available facilities:

- Engineering chemistry laboratory
- Engineering physics laboratory
- Language and personality development laboratory

Engineering Physics Lab

Engineering Chemistry Lab

Language and personality development laboratory

G. Faculty and staffs:

a) Faculty

Sl. No.	Name	Designation	Specialization	Contact address
1.	Dr. Rupak Sarkar	Assistant Professor	Soil and Water Conservation	Faculty of Technology, UBKV, P.O. Pundibari, Dist-Cooch Behar, Pin-736165, West Bengal
2.	Subinay Saha Roy	Assistant Professor	Civil Engineering	-DO-
3	Ashis Kumar Das	Assistant Professor	Electrical Engineering	-DO-
4.	Arindam Mandal	Assistant Professor	Mechanical Engineering	-DO-
5.	Himadri Shekher Konar	Assistant Professor	Processing and Food Engineering	-DO-
6.	Dr. Om Prakash Chaturvedi	Assistant Professor	Farm Machinery and Power	-DO-
7.	Mr. Ashutosh Dutta	Guest Lecturer	Engineering Chemistry	-DO-
8.	Kousik Das	Guest Lecturer	Engineering Mathematics	-DO-
9.	Anuj Kumar Bal	Guest Lecturer	Engineering Physics	-DO-
10.	Subhrajyoti Roy	Guest Lecturer	English	-DO-
11.		Guest Lecturer	Computer science and Engineering	-DO-

b) Non-teaching staffs

Sl. No.	Name	Designation	Contact address
1.	Gautam Kumar Basak	Surveyor	Vivekananda Street, P.O. & Dist-Cooch Behar, Pin-736101
2.	Santanu Dasgupta	Jr. Stenographer	C/o. S.R. Dasgupta, Netaji Road, P.O. & Dist-Alipurduar, Pin736121
3.	Samar Sutradhar	Jr. Storekeeper	Hoglabari, P.O.-Pundibari, Dist.-Cooch Behar, W.B-736165
4.	Samik Das	Technical Assistant	Andaran Fulbari, P.O. Chhat Fulbari, P.S. Tufanganj, Dist-Cooch Behar, Pin-736160
5.	Chandan Sarkar	Jr. Peon	Vill+P.O.-Sajerpar, Ghoramara, Dist-Cooch Behar, Pin-736165
6.	Jahar Kumar Rahut	Mechanic	C/o. Janokinath Chakraborty, Shiv Jagna Road, Khagrabari, P.O. & Dist-Cooch Behar, Pin-736101
7.	Pradip Barman	Mechanic	Vill+P.O. Chhoto Khairatibari, Dist-Cooch Behar, Pin-736165
8.	Swarup Dutta	Jr. Fitter	Vill-Madhya kalarayer Kuthi, P.O. Pundibari, Dist. Cooch Behar, Pin-736165

H. Doctoral Thesis completed: NIL

I. Master Degree thesis completed: NIL

J. Undergraduate projects completed (2017-18):

Year	Name of the Guide	Name(s) of the students	Title of the Project
2017	Arindam Mandal	1) Ajay Mahatot 2) Arindam Bala 3) Sudipta Some	ñCasting and manufacturing of spur gearò
	Himadri Shekhar Konar	1) Anish Ganguly 2) Ambuja Roy 3) Jagannath Narjinary	ñStudy of Drying of Parboiled Paddyò
	Dr. Omprakash Chaturvedi	1) Pushpraj Gautam 2) Arup Mondal	"Design and development of low cost medium size maize sheller"
	Er. Subinoy Saharoy	1) Bhaskar Ch das 2) Bibek Ishore	ôEffect of relative density on permeability of sandò
	Er. Subinoy Saharoy	1) Yogesh Kumar 2) Swarup Dutta	"Engineering properties and interface behavior of Torsa"
	Er. Akhil Kumar Das	1) Shubham Sankar 2) Bapi Bhowal	"Design and Implementation of hospital management"

Year	Name of the Guide	Name(s) of the students	Title of the Project
2018	Subinay Saha Roy	1) Ankan Kheto 2) Avijit Mondal 3) Soumendu Roy	ñEffect of particle size of sand on friction angleò
	Himadri Shekhar Konar and Arindam Mandal	1) Abhijit Paul 2) Anagh Mandal 3) MD Ehsanul haque	ñDesign and fabrication of screw paneer pressò
	Dr. Om Prakash Chaturvedi	1) Kingshuk Khaddar 2) Shubhajit Sarkhel	ñPerformance evaluation of a solar water pumping systemò
	Akhil Kumar Das	1) Debabrata Paul 2) Kapil Deb Singha 3) Rustam Mahapatra	ñDesign and Implementation of Website (Horticulture Site)ò
	Arindam Mandal	1) Manik Biswas 2) Kamal Das 3) Abdul Rasid	ñDesign and manufacturing of Spur Gearò

J. Paper & Books published (2005-2018)

Sl.No.	Title	Author	Journal
Paper (Research and Extension)			
1	An insight into the runoff generation processes in wet sub-tropics: Field evidences from a vegetated hillslope plot	**Rupak Sarkar**, Subashisa Dutta and Amit Kumar Dubey	Catena (Elsevier), 128, 31-43
2	Parametric study of a physically-based plot-scale hillslope hydrological model through virtual experiments	**Rupak Sarkar** and Subashisa Dutta	Hydrological Sciences Journal (Taylor and Francis), 60(3), 448-467
3	Field investigation and modeling of rapid subsurface stormflow through preferential pathways in a vegetated hillslope of northeast India	**Rupak Sarkar** and Subashisa Dutta	Journal of Hydrologic Engineering (ASCE), 17(2): 333-341
4	An experimental investigation to characterise soil macroporosity under different land use and land covers of northeast India	Sangeeta Shougrakpam, **Rupak Sarkar**, and Subashisa Dutta	Journal of Earth System Science (Springer), 119(5): 655-674
5	A physically based hydrological model for paddy agriculture dominated hilly watersheds in tropical region	Sudipta Kumar Mishra, **Rupak Sarkar**, Subashisa Dutta and Sushma	Journal of Hydrology (Elsevier), 357(3-4): 389-404

		Panigrahy	
6	Characterizing overland flow on a preferential infiltration dominated hillslope: Case study	**Rupak Sarkar,** Subashisa Dutta and Sushma Panigrahy	Journal of Hydrologic Engineering (ASCE), 13(7): 563-569
7	Run-off generation from fields with different land use and land covers under extreme storm events	Rishabh Dev Sharma, **Rupak Sarkar**,and Subashisa Dutta	Current Science, 104(8): 1046-1053
8	Effect of scale on infiltration in a macropore dominated hillslope	**Rupak Sarkar**, Subashisa Dutta and Sushma Panigrahy	Current Science, 94(4): 490-494
9	Groundwater modelling for prediction of water table depth in Ramganga-Bahgul interbasin of Uttar Pradesh	**Rupak Sarkar**, Shiv Kumar, Yogendra Kumar and H.C. Sharma	Hydrology Journal, 30(1-2): 123-133
10	A new statistical approach for image fusion technique	**Akhil Kumar Das** and DebasisMandal	International Journal of Computer Science & Engineering Technology (IJCSET) 6(1): 5-9
11	Development of a problem solving support for an intelligent tutoring system	**Akhil Kumar Das** and Debasis Mandal	International Journal of Innovations & Advancement in Computer Science, 4(2): 33-39
12	Effects of novel vacuum drying on orthodox and CTC tea processing,	Anand Kishore, **H. S. Konar** and A. K. Datta	International Journal of Tea Science, **10(3** &4):78 - 88
13	Optimizaion of process parameters for vacuum drying of CTC tea	**H. S. Konar**, Shrilekha Das, A. K. Data and B. C. Ghosh	Two and a bud 59(2): 84-88
14	Ethanolysis Of Jatropha Oil and Process Optimization	**Chaturvedi O. P.,** S Mande, Y P Abbi, K Kundu	International Journal of Recent Scientific Research Vol. 4, Issue,4, pp. 1005-1010. ISSN:0976-3031
15	Biodiesel Plant Design For Rural application	**Chaturvedi O P,** S Mande, P Rajan, K Kundu	ZENITH International Journal of Multidisciplinary Research. ZIJMMR, Vol.3 Issue 9, pp 46-52. ISSN 2231-5780

16	Use of Esterified Soybean, Sunflower, Mustard, Karanja and Neem Oils in C.I. Engine	Anbumani K, **Chaturvedi O P**, Garg S K and Garg R	Journal of Fijian Studies. Vol. 9, No. , pp 111-126. ISSN 1728-7456.
17	Evaluation of Different Biofuels for Power Generation in Villages through Genset	**Chaturvedi O P** and Lal B	Journal of Fijian Studies. Vol. 9, No. , pp 184-193. ISSN 1728-7456.
18	Fuel Ethanol Prospect and Problem.	Kundu K, Bhattacharya T K and **Chaturvedi O P.**	Pantnagar Journal of Research. Vol 4 (1) pp 105-111. ISSN 0972-8813.
Book Chapter			
Book			
	Groundwater modelling: A comparison between multiple regression and artificial neural network approaches	**Rupak Sarkar**	LAP Lambert Academic Publishing, Germany, ISBN: 978-3-659-25948-7, pp. 1-137

K. Seminar, Symposium, Conference, Training and Winter/Summer/Refresher course/short course attended/organised

Sl. No.	Seminar, Symposium, Conference, Training and Winter/Summer/Refresher course/short course	Faculty associated	Date	Venue	Attended/ Organised
1.	Exploring new horizons of translation	Subhrajyoti Roy	16TH & 17TH MARCH, 2012	ABN SEAL COLLEGE, Cooch Behar	Attended
2.	UGC Sponsored National Seminar & State Level Science Training.	Ashutosh Dutta	--	IIT Kanpur (Funded by NBHM)	Attended
3.	Mathematics Training and Talent Search Programme	Kousik Das	21st May to 16th June, 2012	Department of Mathematics, NBU	Attended
	Workshop on General Topology with Special Emphasis on Proximities, Compactifications and Rings of Continuous		21st February to 2nd March, 2013	Dept. of Geography, Cooch Behar College	
	Environmental Degradation and Disasters- A vision plan for sustainable development.		25th and 26th Aug., 2016	Cooch Behar College	
	3 Day Workshop on Latex		29th ï 31st Aug., 2016	IIT Kanpur (Funded by NBHM)	

4.	Participated in 28 days Refresher Course of UGC	Dr. Rupak Sarkar	2-29th March, 2012	University of North Bengal.	Attended
	Participated in the two weeks NNRMS (ISRO) sponsored training programme on ñ*Remote Sensing and GIS"*		5-16th May, 2008.	IIT Kharagpur	
	Attended the AICTE sponsored QIP short-term course on ñ*Hydroinformatics and Flood Management (HFM-2006)*ò		16-20th October, 2006	IIT Guwahati	
	Participated in GIS training programme on ñ*Geoinformatics and its Applications*ò organized by *Coordinates*, GIT Delhi,		18-20th September, 2006	IIT Guwahati	
	Estimation of runoff curve numbers using a physically-based approach of preferential flow modelling		October, 2014	International FRIEND WATER Conference held at Montpellier, France	
	An insight into the hydrological extremities in a vegetated hillslope of Northeast India. In óHolistic Scientific Approach using Integrated Geophysical Studies for the Management of Natural Hazardsô		22-23 April, 2013	Umiam, Meghalaya, India.	
	Hydrological response of hillslopes in the Brahmaputra Basin: An experimental and modeling investigation. In óAn International Perspective on Environmental and Water Resourcesô		December 18-20, 2006	Organized by EWRI of ASCE and IIT Kanpur, New Delhi, India.	
	Subsurface stormflow study for hydrological extremities management in North-Eastern India. In óNEGeo-2006 ï Developing North East Geospatiallyô		September 21-22, 2006	Guwahati, India	
5.	Orientation Programme	Subinay Saha Roy	2nd-29th March, 2012	University of North Bengal	Attended
	Earthquake Risk Management		11th to 18th June, 2012	Jalpaiguri Govt. Engg. College	
	Numerical and Experimental Modeling in Geotechnical Engineering		4th to 9th Feb, 2009	IIT Kanpur	
	International Conference on Soft Ground Engineering (ICSGE2015)		3rd - 4th December, 2015	Singapore	

6.	2nd Internatiional Conference on ñBioenergy, Environment and Sustainable Technologies (BEST 2015)ò	Om Prakash Chaturvedi	28-31 January, 2015	Tiruvannamalai, Tamilnadu	Attended
	International conference and expo on Biofuels		2012	IHC, New Delhi	
	International congress on Renewable Energy (ICORE)		2006	Solar Energy Society India, ICC, Hyderabad	
	The 2nd Symposium on Renewable Energy Technologies (SoRET),		October, 2011	Raiwai, Fiji Island	
	National Symposium on biodiesel ï a sustainable renewable fuel for India,		2004	CTE, MPUA&T, Udaipur	
	National Convention and Symposium of Indian Society of Agricultural Engineering		2004	ANGRAU, Hyderabad	
	National Seminar on Producing and Use of Bio-diesel for Energy Appliction		2006	NTPC, Noida	
	22nd National Convocation of Mechanical engineers, Institute of Engineers India, IIT, Guwahati. Biofuel Production Methodologies, Utilization Technique and Challenge Aheadò		22-23 March, 2007	Ludhiana	

L. Any other (Achievement)

i) Technology/Implements Developed:

The students of the faculty developed a power operated maize sheller, a pedal cum power operated paddy thresher, hydraulic operated tractor rear mounted load carrier, paneer press and grass shredder as part of their hands on training and project work at the institution.

Pedal cum power operated paddy thresher

Tractor rear mounted load carrier

Grass shredder

Working of Maize sheller

Assembled Maize sheller

Paneer press

ii) In Plant Trainings:

The Faculty organizes two compulsory trainings of one month duration each; one at the end of 4th Semester and the other at the end of 6th Semester with a view to expose the students to the modern and newly landed machineries and equipments. These trainings are organized in various reputed institutes like Farm Machinery Training & Testing Institutes (Norther, Southern, North Eastern, and Central Region); Central Institute of Agricultural Engineering (CIAE), Bhopal; Himul Dairy, Siliguri; Central Dairy, Kolkata; Britannia Industries, Amul industries, Kolkata; Damodar Valley Corporation (DVC), Hazaribag etc.

iii) Performance under students READY program

1. **Processing and Bottling of Sweetened carbonated Beverages**

Students have learned the method of production and bottling of sweetened carbonated beverage using manual batch carbonation unit installed under ELP unit (skill mode) of faculty of technology. This product has a huge potential to gain profit in business mode.

Production of sweetened carbonated beverage.

2. Study of different processing operations of a bakery industry

3. Study of different components of a cold storage