



Value Added Course on
**HAZARD MANAGEMENT
AND DISASTER PREPAREDNESS IN
EMERGENCIES**

Organized by Department of Earth Science

University of Science and Technology, Meghalaya

Course structure

Marks: 50

Duration: 30 Hours

Objectives:

- 1) To understand concepts of hazards and disaster*
- 2) To know causes and impacts of different hazards*
- 3) Capacity building in hazard management and disaster mitigation*

UNIT I: Understanding Hazards and Disaster

(3

Hours)

Hazard and Disaster; Natural and Human-induced disasters – Introduction, Conceptual framework; difference between Hazard and Disaster, different stages involved in Disaster; Disaster phenomena and events

UNIT II: Environmental and Human Induced Disasters

(15

Hours)

Earthquake and associated impacts, structural damage and its prevention, dams and earthquakes; Flood; causes, impacts and mitigation; Drought: causes, impacts, precautions and mitigation; Landslide and River bank Erosion: mechanism and control; Occupational hazards.

UNIT III: Disaster Management and Disaster Mitigation

(6

Hours)

Concept of disaster management; Community Based Disaster Management; Concept of mitigation and preparedness, Institutional framework for disaster preparedness and mitigation- Global and Indian scenario; Training and Human Resource Development Plan, Family disaster plan.

UNITIV: Rehabilitation, Reconstruction and Recovery

(6

Hours)

Recovery aspects- long term and short term, Physical and social infrastructure: Relocation and reconstruction of structural and non-structural components, Social and economic

rehabilitation: Capacity building and skill enhancement for disaster preparedness in emergency situations (with reference to North East India).

Essential books:

1. *Disaster Management: A Disaster Manager's Handbook*, Carter, W.N., 1992, Asian Development Bank, Manila.
2. *Encyclopaedia on Disaster Management: Disaster Management Policy and Administration*, S.L. Goel, 2006, Deep & Deep Publications Pvt. Ltd. New Delhi.
3. *Disaster Management Recent Approaches*. Arvind Kumar, 2010, Anmol Publications Pvt. Ltd. New Delhi.
4. KapurAnu and Neeti, Meeta, Deeptiman, Roshani and Debanjali, 2005, *Disasters in India Studies of Grim Reality*, Rawat Publications, New Delhi.



Department of Earth Science

University of Science & Technology, Meghalaya

Value Added Course on
“Data Analysis Using Statistical Tools”

Course Code: VAC-1823

List of registered students:

Sl No	Name of Participant	Roll No.
1	Koustav Krishna Nath	17/MEV/01
2	Santho Ch Marak	17/MEV/02
3	Abhishek Khanal	17/MEV/03
4	Revamica Suchiang	17/MEV/04
5	Shahin Siddiqua	17/MEV/05
6	Nora T Sangma	17/MEV/07
7	Mithinga Daimari	17/MEV/08
8	Sansuma Basumatari	17/MEV/09
9	Amanda Lytan	17/MEV/10
10	Sookiwaka Lywait	17/MEV/11
11	Kynsai Bor Bamon	17/MEV/12
12	Dixita Phukan	17/MEV/13
13	Kuki Saikia	17/MEV/14
14	Norimbe S Sangma	17/MEV/15
15	Ronald Ratana Basumatary	17/MEV/16
16	Thajim Brahma	17/MEV/17
17	Lairenlakpam Sisily Devi	17/MEV/18
18	Ome Megu	17/MEV/19
19	Tilling Sunya	17/MEV/25
20	Monojit Debbarma	17/MEV/06
21	Jena Daimari	17/MEV/72
22	Smrity Chiring Phukon	17/MGE/01
23	Prayasi Bordolai	17/MGE/02
24	Upakha Boruah	17/MGE/03
25	Dhrubajit Goyary	17/MGE/04
26	Kashmir Lal Debbarma	17/MGE/05
27	Marbianglangki Dhar	17/MGE/06

28	Mrinalee Basumatary	17/MGE/07
29	Susmita Debbarma	17/MGE/08
30	Ananya Gogoi	17/MGE/09
31	Mamata Biswas	17/MGE/10
32	Md Radiyum Ahmed	17/MGE/11
33	Rupam Kr Medhi	17/MGE/12
34	Opet Jerang	17/MGE/13
35	Abul Kalam Azad	17/MGE/14
36	Malin Hansepi	17/MGE/15
37	Chimpe Deka	17/MGE/16
38	Alfi Shahrin Rahman	17/MGE/17
39	Iftasum Khusboo	17/MGE/18
40	Parchi Moni Bora	17/MGE/19
41	Kamal Kumar Talukdar	17/MGE/20
42	Mitali Rabha	17/MGE/21
43	Dulumoni Basumatary	17/MGE/22
44	Hiranya Das	17/MGE/23
45	Parijat Borah	17/MGE/24
46	Rimjim Borah	17/MGE/25
47	Manish Kumar Choudhury	17/MGE/26
48	Syada Parbeen Rahman	17/MGE/27
49	Rubu Mamung	17/MGE/28
50	Abhilasha Barman	17/MGE/29
51	Jasmine Basumatary	17/MGE/30
52	Manashini Sharma	17/MGE/31
53	Nitumoni Deori	17/MGE/32
54	Smriti Rekha Barman	17/MGE/33
55	Nizara Basumatary	17/MGE/34
56	Anusree Biswas	17/MGE/35
57	Palash Kakati	17/MGE/36
58	Deep Jyoti Kumar	17/MGE/37
59	Mintumoni Sarmah	17/MGE/38
60	Nayanita Medhi	17/MGE/39
61	Phur Doma Sherpa	17/MGE/40
62	Okong Ratan	17/MGE/41
63	Gautom Handique	17/MGE/42
64	Lalthanpuui Ngamlai	17/MGE/43
65	Kordorlang Lyngdoh Mawlong	17/MGE/44
66	Salma Nasrin	17/MGE/45
67	Subrata Tripura	17/MGE/46
68	Deepsikha Payeng	17/MGE/47

69	Prity Sarma Boruah	17/MGE/48
70	Vishakha Borthakur	17/MGE/49
71	Mrinal Hazarika	17/MGE/50
72	Surajit Debbaram	17/MGE/51
73	Prasanta Hajong	17/MGE/52
74	Maigonglum Chiba	17/MGE/53
75	Gitanjali Devi	17/MGE/54
76	Julu Mudoi	17/MGE/55
77	Purabi Borah	17/MGE/56
78	Kunal Basumatary	17/MGE/57
79	Sangita Roy	17/MGE/58
80	Madhurja Saikia	17/MGE/59
81	Nightya R Marak	17/MGE/60
82	Dariker Lato	17/MGE/61
83	Himadri Mahanta	17/MGE/62
84	Nayan Prasad Rabha	17/MGE/63
85	Manjira Bordoloi	17/MGE/64
86	Inti Bhuyan	17/MGE/65
87	Silonish A Sangma	17/MGE/66
88	Jahangir Alam Miah	17/MGE/67
89	Nabajyoti Kalita	17/MGE/68
90	Subhasish Rabha	17/MGE/69
91	Nitamani Buzarbaruah	17/MGE/70
92	Priyanka Singh	17/MGE/71
93	Bhaskar Jyoti Buragohain	17/MGE/72
94	Bindia Debbarma	17/MGE/73

Dr Eahya Al Huda
HOD, Earth Science



University of Science & Technology, Meghalaya
Department of Applied Biology

Course Duration: 32 hrs.

Full Marks: 50

Course Title: Food Analysis
Course Code: VAC-1503

Course Content

After successful completion, this course enables students

CO1. To understand the different techniques related to food analysis.

CO2. To understand physical parameters of different food.

CO3. To get an insight into the chemical parameters of different food.

CO4. To have the concept on chromatographic approach in food.

CO5. To understand the mechanism of sensory evaluation in food.

Theory:

Module-I:

Food analysis: significance. Sampling: techniques, preparation, preservation.

Module-II:

Physical properties and analysis of foods and food products: appearance, texture, specific gravity.

Module-III:

Chemical analysis: significance. Proximate analysis: moisture, ash, proteins, lipids, carbohydrates, fiber, NFE, acidity, pH, sugars, mineral elements, vitamins – significance, methods.

Module-IV:

Chromatography: paper, thin layer. Spectroscopy: atomic emission, atomic absorption.

Module-V:

Sensory evaluation of foods: attributes, difference and preference tests, consumer acceptance.

Practical

1. Lab safety requirements. Preparation and standardization of laboratory solutions.
2. Sampling. Determination of specific gravity, refractive index, moisture, ash, crude protein, crude fat, NFE, pH and acidity.
3. Estimation of vitamin C. Paper and thin layer chromatography. Sensory evaluation of foods.



Department of Applied Biology

University of Science & Technology, Meghalaya

Value Added Course on
“Food Analysis”
Course Code: VAC-1503

List of registered students:

Sl No	Name of Participant	Roll No.
1	Akashdip Das	15/BFST/02
2	Iftikar Hussain	15/BFST/03
3	Jyotirekha Kalita	15/BFST/04
4	Gautam Bodosa	15/BFST/05
5	Queen Roy	15/BFST/06
6	Jyoti Prakash Doley	15/BFST/07
7	Renbemo Y Ovung	15/BFST/08
8	Syeda Jadida Akhtar	15/BFST/09
9	Sujata Hazarika	15/BFST/10
10	Phameinao Shaiza	15/BFST/11
11	Pirbi Ronghangpi	15/BFST/12
12	Madhusmita Malakar	15/BFST/13
13	Pratikshya Dutta	15/BFST/14
14	Pill Ayin	15/BFST/15
15	Aakangsha Kashyap	15/BFST/16
16	Kaberi Borah	15/BFST/17
17	Carnevia M Momin	15/BFST/18
18	Salchugra R Marak	15/BFST/19
19	Flora Sume R Marak	15/BFST/20
20	Indrani Baruah	14/BBT/01
21	Partha Pratim Dutta	14/BBT/02
22	Shain Ahmed Barbhoiya	14/BBT/03
23	Jyootishma Borkakati	14/BBT/04
24	Taku Oniya	14/BBT/05
25	Elufer Akram	14/BBT/06
26	Rijajur Rahman	14/BBT/07
27	Mondeep Gogoi	14/BBT/08
28	Anupjyoti Das	14/BBT/09
29	Reshma Sultana	14/BBT/10
30	Eftesum Elahi	14/BBT/11
31	Hinchong Hanse	14/BBT/12
32	Khadiza Rahman	14/BBT/14
33	Shekhar Jyoti Sharma	14/BBT/15

34	Nishigandha Sharma	14/BBT/16
35	Sraddhwa Bordoloi	14/BBT/17
36	Shiuangi Thapa	14/BBT/18
37	Nurul Hassan	14/BBT/19
38	Novojyoti Dutta	14/BBT/20
39	Pallab Jyoti Neog	14/BBT/21
40	Mozbin Aktara	14/BBT/22
41	Pronoy Lang Thasa	14/BBT/24
42	Samrat Kalita	14/BBT/27
43	Shehnaz Sultana	14/BBT/28
44	Sayed Tafikul Islam	14/BBT/31
45	Tapash Pratim Saikia	14/BBT/32
46	Remi Dey	14/BBT/33
47	Bashem Phag Blah	14/BBT/35
48	Himashree Kalita	14/BBT/36
49	Komal Prajapat	14/BBT/37
50	Baishali Parashar	14/BBT/40
51	Supriti Sinha	14/BBT/41
52	Ashapurna Bordoloi	14/BBT/42
53	Sweetty Gogoi	14/BBT/43
54	Nitusmita Baruah	14/BBT/44
55	Babita Kakati	14/BBT/45
56	Priya Islam	14/BBT/46
57	Narjia Hassan	14/BBT/47
58	Nishiraj Bora	14/BBT/48
59	Sunanda Sinha	14/BBT/49
60	Meghna Sinha	14/BBT/50
61	Tridip Kumar Deka	14/BBT/51
62	Radhashree Debbarma	14/BBT/52
63	Fahmida Begum	14/BBT/53
64	Arati Gupta	14/BBT/54
65	Delan Rongdipi	14/BBT/56
66	Purobi Ramchiary	14/BBT/58
67	Merazul Islam	14/BBT/59
68	Amikha Chungkrang	14/BBT/60
69	Sayan Nath	14/BBT/61
70	Priyali Saikia	14/BBT/63
71	Madhavi Deuri	14/BBT/64
72	Sabom Dakpe	14/BBT/65
73	Lakum C. Chang	14/BBT/66
74	Nqursanga	14/BBT/67
75	Rishi Raj Das	14/BBT/68
76	Tanu Karmakar	14/BBT/69
77	Saheli Bhattacharjee	14/BBT/70
78	Jefrin Ahmed	14/BBT/71
79	Ajmina Begum	14/BBT/72

80	William Carrie	14/BBT/73
81	Presleyson Hanse	14/BBT/75
82	Karshique Timung	14/BBT/76
83	Eswar Jyoti Dutta	14/BBT/77
84	Priyanka Kalita	14/BBT/81
85	Kulina Mahanta	14/BBT/82
86	Nipul Ali Ahmed	14/BBT/84
87	Supratim Goswami	14/BBT/85
88	Nasima Begum	14/BBT/86
89	Guchi Nigma	14/BBT/87
90	Pranjit Kalita	14/BBT/90
91	Biswanath Ch Hajong	14/BBT/92
92	Persome Debbarma	14/BBT/93
93	Simanta Das	14/BBT/95
94	Jasmin Sultana	14/BBT/96

Dr. Sony Kumari
HOD, Applied Biology



University of Science and Technology, Meghalaya
DEPARTMENT OF PHYSICS

Value Added Course on
Recent Developments in Nanotechnology
Course Code: VAC-1624

Duration: 32 hrs

Total marks: 50

Course Objectives:

- CO 1. After due completion of the course students will learn the basic properties of Nanostructures.
- CO 2. Students will gather knowledge on synthesis, fabrications and characterization process of nonmaterial.
- CO 3. Students will extract the knowledge on carbon nanotubes, their importance and applications in various fields.
- CO 4. Students will gain the laboratory safety measures in handling instruments and chemicals, process of characterization of materials etc.

Module-I: Introduction and basics

[9 hours]

History and introduction to nanoscience and nanotechnology, Nanostructures and nanomaterials, Difference with bulk and microstructures, Properties of nanostructures, Nanomaterials of different dimensions, Evolution of density of states with size, Excitons and quantum confinement, Band gap engineering in semiconductor nanostructures, metal nanostructures and plasmon resonance, Magnetic nanostructures and super-paramagnetism

Module-II: Synthesis and fabrication of nanostructures and their characterization

[7 hours]

Top down and bottom up approaches, Various chemical and physical methods of synthesis of nanostructures, Photolithography & Electron-beam lithography for fabrication of nanostructures, Morphological, optical, electrical and magnetic characterization tools of nanomaterials

Module-III: Carbon nanotubes

[4 hours]

Carbon nanotubes and their various types, Synthesis of nanotubes by physical and chemical methods, Importance and applications of nanotubes in various fields

Module-IV: Applications

[4 hours]

Semiconductor nanostructures and their applications, Metal nanostructures and their applications, Nanostructures and their biological applications, Future outlook

Module-V: Hands on training at Nanotechnology lab

[8 hours]

Introduction to laboratory safety rules and chemicals handling, Use of digital balance, Handling and working with magnetic stirrers and hot air ovens, Semiconductor and metal nanoparticle synthesis demonstrations, UV-visible spectrophotometer: introduction, application and use in characterization of nanostructures



DEPARTMENT OF PHYSICS

University of Science & Technology, Meghalaya

Value Added Course on
“Recent Trends in Nanotechnology”
Course Code: VAC-1732

List of registered students:

Sl No	Name of Participant	Roll No.
1	Habib Nunazil Alam	16/MSP/01
2	Suvankar Deka	16/MSP/02
3	Sajia Yeasmin	16/MSP/03
4	Nilima Yasmin	16/MSP/04
5	Kalpita Bharati	16/MSP/05
6	Dewan Ariful Alom	16/MSP/06
7	Arpana Barman	16/MSP/07
8	Omi Borang	16/MSP/08
9	Rimlee Saikia	16/MSP/09
10	Abdulla Al Mahmud	16/MSP/10
11	Bidyut Baran Dey	16/MSP/11
12	Taslima Begum	16/MSP/12
13	Amina Khatun	16/MSP/13
14	Johirul Islam	16/MSP/14
15	Barnali Nath	16/MSP/15
16	Sengchina D Sangma	16/MSP/16
17	Silpi Sikha Sarmah	16/MSP/17
18	Arzuman Gulnas Arifa Rahman	16/MSP/18
19	Salima Parbin Begum	16/MSP/19
20	Mahmudul Hassan	16/MSP/20
21	Shahanur Alom	16/MSP/21
22	Amit Raut	16/MSP/22
23	Nabin Noor Ashwas	16/MSP/23
24	Masmin Begum Hazarika	16/MSP/24
25	Samuel Kenedy Dai	16/MSP/25
26	Jaminur Rahman	16/MSP/26
27	Elisheba Syiem	16/MSP/27
28	Joyanal Abdin Sk	16/MSP/28
29	Jakir Hussain Ahmed	16/MSP/29
30	Sk Mustafizur Ahmed	16/MSP/30
31	Md Elias Zabid	16/MSP/31
32	Willing Khyriem	16/MSP/32
33	Paul Kyrshanboklang Wansai	16/MSP/33

34	Mrinmoy Koushik Bora	16/MSP/34
35	Mainul Haque	16/MSP/36
36	Sangita Devi	16/MSP/37
37	Hafijul Islam	16/MSP/38
38	Pallab Barman	16/MSP/38
39	Aditya Baishya	16/MSP/39
40	Rima Kalita	16/MSP/40
41	Rakesh Ghimire Chetry	16/MSP/41
42	Rajesh Ahmed	16/MSP/42
43	Kaushik Jyoti Sarma	16/MSP/43
44	Debajit Sarmah	16/MSP/44
45	Sabanam Talukdar	16/MSP/45
46	Nur Hossain	16/MSP/46
47	Utpal Talukdar	16/MSP/47
48	Eragdaw Basumatary	16/MSP/48
49	Jubin Talukdar	16/MSP/49
50	Saljrak R Sangma	16/MSP/50
51	Bulbul Rahman	16/MSP/51
52	Monirul Hussain	16/MSP/52
53	Koushiki Saikia	16/MSP/53
54	Tonmoi Hazarika	16/MSP/54
55	Subhash Chandra Sarma	16/MSP/55
56	Sabur Ahmed Barbhuiya	16/MSP/56
57	Monjur Ahmed Barbhuiya	16/MSP/57
58	Kasturi Talukdar	16/MSP/58
59	Sofi Mohammad Ashraf	16/MSP/59
60	Manju Kumari Jaiswal	16/MSP/60
61	Ikbali Farid Ali	16/MSP/61
62	Farhana Yasmin Rahman	16/MSP/62

Dr. Mayuri Devesh
HOD, Physics



University of Science and Technology, Meghalaya
DEPARTMENT OF PHYSICS

Value Added Course on
Astrophysics and Astronomical Instrumentations
Course Code: VAC 1840

Duration: 35 hrs

Total marks: 50

Course Objectives:

After successful completion of the course the students will acquire

- CO 1. The knowledge of identification of stars by naked eye viewing,
- CO 2. The idea of celestial sphere and coordinate system,
- CO 3. The knowledge of optical techniques for observing the stars, radio data acquisition
- CO 4. The idea of stellar evolution and milky way galaxy and the use of Astronomical Instrumentations

Module-I: Introduction to naked eye Astronomy

[5 Hrs]

The constellations and their identification, Identification of some individual stars, A sense of scale and time, A historical perspective and Copernican revolution, Earth's rotation and other motions, Eclipses, Interesting objects in the night sky, A general perspective of the universe, The value of Astronomy

Module-II: Celestial sphere and the coordinate systems

[3 Hrs]

Geometry of celestial sphere, alt-azimuth and equatorial coordinate systems, ecliptic, sunset and sunrise, solar and sidereal time.

Module-III: Optical techniques for observing the stars

[4 Hrs]

Optical telescopes, Light gathering power, Observing in different spectral regions, Magnifying power, Resolving power, Measurement of stellar distances, Stellar magnitudes, Stellar parallaxes, Stellar photography.

Module-IV: Radio Techniques

[4 Hrs]

Radio telescopes, power, spectral power, brightness distribution, flux density, resolution, effective collecting area, nearby radio sources in the sky.

Module-V: Stellar Evolution and Milky Way galaxy

[4 Hrs]

Formation of stars, stellar energy generation, stellar prime of life, stellar structure, galaxies, dying stars, nebulae and supernovae remnants, pulsars, neutron stars and black holes.

Module-VI: Hands on training on Astronomical Instrumentation

[15 Hrs]

- Distance of ground objects by parallax method.
- Handling of Eyepieces
- Understanding Alt-Azimuth and Equatorial mounts
- Assembling of a telescope
- Introduction to Astrophotography



DEPARTMENT OF PHYSICS

University of Science & Technology, Meghalaya

Value Added Course on
“Astrophysics and Astronomical Instrumentations”
Course Code: VAC-1840

List of registered students:

Sl No	Name of Participant	Roll No.
1	Jintu Mon Idas	2018/MSP/0001
2	Rafiqul Hassan	2018/MSP/0002
3	Sk. Shariful Islam	2018/MSP/0003
4	Saurabh Jyoti Deka	2018/MSP/0004
5	Nashrufa Siddiqua	2018/MSP/0005
6	Nazma Hephtullah	2018/MSP/0006
7	Sajida Sultana Sarkar	2018/MSP/0007
8	Najir Ahmed Chowdhury	2018/MSP/0008
9	Nileema Akhtar	2018/MSP/0009
10	Swahruckh Irfan Ahmed	2018/MSP/0010
11	Mohibul Islam	2018/MSP/0011
12	Safiqur Rahman	2018/MSP/0012
13	Dibyajyoti Kalita	2018/MSP/0013
14	Bhabesh Das	2018/MSP/0014
15	Debajit Talukdar	2018/MSP/0015
16	Barihun Wanniang	2018/MSP/0016
17	Kankana Saikia	2018/MSP/0017
18	Ayushman Talukdar	2018/MSP/0018
19	Jiaul Hoque	2018/MSP/0019
20	Md Rakib Islam	2018/MSP/0020
21	Kalpajyoti Kalita	2018/MSP/0021
22	Dhanmoni Nath	2018/MSP/0022
23	Suitha D. Sangma	2018/MSP/0023
24	Shofikul Islam	2018/MSP/0024
25	Nur Alom	2018/MSP/0025
26	Muktar Hussain	2018/MSP/0026
27	Biraj Kumar Paul	2018/MSP/0027
28	Bhaskarjyoti Das	2018/MSP/0028
29	Venisha M Sangma	2018/MSP/0029
30	Minakshi Deka	2018/MSP/0030
31	Jamat Ali Talukdar	2018/MSP/0031
32	Maumita Dutta	2018/MSP/0032
33	Asif Monowar Khan	2018/MSP/0033
34	Jigyas Das	2018/MSP/0034
35	Jakgam Kongkal Marak	2018/MSP/0035

36	Saidur Rahman	2018/MSP/0036
37	Ajminara Khatun	2018/MSP/0037
38	Salamot Khan	2018/MSP/0038
39	Ringkhang Brahma	2018/MSP/0039
40	Jiaur Rahman	2018/MSP/0040
41	Julfiker Ali Ahmed	2018/MSP/0041
42	Mizanur Rahman	2018/MSP/0042
43	Marina Nazmin	2018/MSP/0043
44	Akram Ali	2018/MSP/0044
45	Indari Shisha Nongkynrih	2018/MSP/0045
46	Sultan Mahammad	2018/MSP/0046
47	Ujjwal Barman	2018/MSP/0047
48	Mirja Sofiqul Islam	2018/MSP/0048
49	Shikha Baishya	2018/MSP/0049
50	Dasanlang R Laitmon	2018/MSP/0050
51	Inzamul Ahmed	2018/MSP/0051
52	Nurnehar Khatun	2018/MSP/0052
53	Sk. Md Golam Baharul Mostofa	2018/MSP/0053
54	Mujakkir Hussain	2018/MSP/0054
55	Mash -Huda B Ahar Choudhury	2018/MSP/0055
56	Ubaidul Islam	2018/MSP/0056
57	Hafizur Rahman	2018/MSP/0057
58	Markala Longkumer	2018/MSP/0058
59	Pinki Basumatary	2018/MSP/0059
60	Ishaque Parvez	2018/MSP/0060
61	Yingam Kena	2018/MSP/0061
62	Hirak Jyoti Nath	2018/MSP/0062
63	Jakaria Alom	2018/MSP/0063
64	Memorial Papang	2018/MSP/0064

Dr. Sanchita Roy
HOD, Physics



University of Science & Technology, Meghalaya
Department of Applied Biology

Course Duration: 30 hrs.
Marks: 50

Full

Course Title: Rural Biotechnology
Course Code: VAC-1401

Introduction

Biotechnology provides a great potential for a new technological revolution in industrial and agricultural sectors. Biotechnology in rural areas means integrated use of biochemistry, microbiology and engineering sciences to achieve technological application of the capabilities of microorganisms and cultured tissues/cells for rural development. An integrated knowledge of this field is afoot to bring a potential development in the rural population in which an inter relationship is needed as an essential support between rural people and biotechnologists/industrialists/extension agencies.

Human civilization is basically an agrarian one, and neglecting agriculture and endogenous knowledge has visibly started to affect our ecosystem, environment, economy, and civilization. Rural development is inevitably connected to several key endeavors having global impacts like food security, protection of environment, and conservation of natural resource base including local landraces, germplasm, and biodiversity. Successful application of rurally relevant biotechnology will be a necessity in transforming agriculture besides enhancing and protecting rural livelihoods as well as rural integrity.

Course Content

- CO1.** To understand the basic concept of composting technology, raw materials, method and utilization of the end product.
- CO2.** To understand the technique methane production following the concept of methanogenesis using organic raw materials.
- CO3.** To get an insight into the technical aspects of rain water harvesting; designing of a rain harvesting plant utilization of harvested water
- CO4.** To understand the mechanism of mass cultivation of edible mushroom using organic waste and its processing.
- CO5.** To understand the varieties and breeding techniques associated with ornamental fish.

Module-I: Composting Technology
lectures]

[5

Historical background; raw materials and methods; factors influencing the process.

Vermiculture Technologies: different types of waste suitable for vermicomposting; raw materials, species used and methods. Utilization of vermicompost for crop production.

Visit to vermicompost industries with field demonstration.

Module-II: Biogas Technology
lectures]

[4

Historical background; microbes involved; wastes used in methanogenesis, factors influencing methane production and stages of methane generation.
Visit to biogas production units with field demonstration.

Module-III: Rain Water Harvesting [2
lectures]

Concept and technical aspects. Design of a rain harvesting plant; harvesting rain water for drinking and other purposes.

Module-IV: Mushroom Technology [5
lectures]

Mushroom farming and prospects; Bioconversion of organic wastes into protein using mushroom technology; post harvest technology.
Visit to mushroom farms with field demonstration.

Module-V: Ornamental Fish Culture [4
lectures]

Present status and importance. Popular varieties; artificial and live feeds; breeding techniques of egg layers.
Visit to ornamental fish farms with field demonstration



Department of Applied Biology

University of Science & Technology, Meghalaya

Value Added Course on
“Rural Biotechnology”
Course Code: VAC-1401

List of registered students:

Sl No	Name of Participant	Roll No.
1	Pranami Gohain	13/MBT/01
2	Anup Jyoti Goswami	13/MBT/02
3	Suman Das	13/MBT/03
4	Jahangir Ali	13/MBT/04
5	Poulumi Choudhury	13/MBT/06
6	Prabhati Kalita	13/MBT/07
7	Krondashree Duarah	13/MBT/08
8	Nirupam Das	13/MBT/09
9	Jitumani Das	13/MBT/10
10	Liza Bhuyan	13/MBT/11
11	Luckish Brand M Sangma	13/BBT/01
12	Md Moktadur Rahman	13/BBT/02
13	Mridusmita Gogoi	13/BBT/03
14	Saloni Gupta	13/BBT/06
15	Shivani Silpa Gogoi	13/BBT/09
16	Swagata Goswami	13/BBT/11
17	Hriday Teron	13/BBT/12
18	Rezwana Alom Laskar	13/BBT/13
19	Ipsita Dutta	13/BBT/14
20	Sharvanee Borah	13/BBT/15
21	Khakchangti Debbarma	13/BBT/16
22	Mrinal Goswami	13/BBT/17
23	Kongkoan Mahanta	13/BBT/18
24	Kangkanaa Goswami	13/BBT/19
25	Zeenat Anar Hussain	13/BBT/20
26	Suhasinee Sandilya	13/BBT/22
27	Gautam Deori	13/BBT/23
28	Farida Akhtar	13/BBT/24

29	Namsile	13/BBT/25
30	Bikrom Tisso	13/BBT/26
31	Hanif Iqbal Laskar	13/BBT/27
32	Nashreen Akhtar	13/BBT/29
33	Anindita Baruah	13/BBT/31
34	Biswajit Baishya	13/BBT/33
35	Yasmin Begum Tapadar	13/BBT/34
36	Rohit Rakshit Khan	13/BBT/39
37	Ebormi Shylla	13/BBT/42
38	Bhaskar Jyoti Sharma	13/BBT/43
38	Md Irfan Lari	13/BBT/44
40	Rajoshree Saha	13/BBT/45
41	Jyotika Kalita	12/BBT/01
42	Biswajit Koushik Sarma	12/BBT/02
43	Panchali Talukdar	12/BBT/03
44	Abhijit Roy	12/BBT/04
45	Reshma Dkhar	12/BBT/05
46	Rupamjyoti Borah	12/BBT/06
47	Fogila Begum	12/BBT/09
48	Bidisha Das	12/BBT/10
49	Krishna Brahma.	12/BBT/11
50	Rakim Ranjan Baruah	12/BBT/13
51	Neelabh Choudhury	12/BBT/14
52	Neikesonuo	12/BBT/15
53	Bendangtula Walling	12/BBT/16
54	Ritwika Saikia	12/BBT/17
55	Pranjal Hazarika	12/BBT/18
56	Maitreyee Das	12/BBT/19
57	Riba Borkakoty	12/BBT/20
58	Anukalpa Saikia	12/BBT/21
59	Parashmoni Goswami	12/BBT/22
60	Tannaz Tabassum	12/BBT/23
61	Rahul Amin	12/BBT/25
62	Chayanika Sarma	12/BBT/26
63	Shainy Debbarma	12/BBT/27
64	Loitongbam Jenny Singh	12/BBT/28
65	Joydeep Nunisa	12/BBT/30

Dr. Sony Kumari
HOD, Applied Biology



University of Science and Technology, Meghalaya
DEPARTMENT OF COMMERCE

Value Added Course on
Entrepreneurship
Course Code: 1610

Duration: 35 hrs

Total marks: 50

Learning objective: This course will create awareness about entrepreneurial opportunities. The course will empower students with necessary skills needed to become an entrepreneur.

Course Outcomes: The following are the course outcomes:

CO1: The course will enhance the knowledge of learners on entrepreneurship. Learners will be able to differentiate between entrepreneurial activities and other economic activities.

CO2: Learners will develop the skills and knowledge requires in establishing entrepreneurial ventures.

CO3: The course will enhance managerial abilities of the learners.

CO4: The course will enhance learner's awareness regarding entrepreneurial opportunities emerging in North East India.

Unit I-Introduction:

5 hours

Concept and Definitions; Role of entrepreneurship in economic development; Entrepreneurship process; Factors impacting emergence of entrepreneurship; Managerial versus entrepreneurial Decision Making; Entrepreneurial attributes and characteristics.

Unit II- Creating Entrepreneurial Venture:

15 hours

Generating Business idea- Sources of Innovation, methods of generating ideas, Creativity and Entrepreneurship; Challenges in managing innovation; Business planning process; Drawing business plan; Business plan failures; Entrepreneurial leadership- components of entrepreneurial leadership; Entrepreneurial Challenges; Legal issues – forming business entity, considerations and Criteria, requirements for formation of a Private/Public Limited Company.

Unit III-Functional plans:

10 hours

Definition, concept, evolution, marketing mix, Segmentation, Targeting, positioning; HR Planning, Training, Development, motivation, compensation and performance management; Financing and Budgeting Decisions.

Unit IV- Emerging opportunities and North East India:

5 hours

Technological advancement and entrepreneurship, Government Initiatives, Act East Policy, Entrepreneurial opportunities in North East India, Issues in entrepreneurship.



DEPARTMENT OF COMMERCE

University of Science & Technology, Meghalaya

Value Added Course on
“Entrepreneurship”
Course Code: VAC-1610

List of registered students:

Sl No	Name of Participant	Roll No.
1	David Basumatary	15/MCM/01
2	Soba Sehnaz	15/MCM/02
3	Salno G Momin	15/MCM/04
4	Baljagring B Sangma	15/MCM/05
5	Chemea M Sangma	15/MCM/06
6	Fridayber R Marak	15/MCM/07
7	Salsrang G Momin	15/MCM/08
8	Danseng M Sangma	15/MCM/09
9	Nevear Mazi Marak	15/MCM/10
10	Balkhasin Ch Momin	15/MCM/11
11	Sengkambe M Marak	15/MCM/12
12	Suprativ Saha Rabha	15/MCM/13
13	Derhasat Narzary	15/MCM/14
14	Tackime M Sangma	15/MCM/15
15	Bhupendro Hajong	15/MCM/16
16	Domera Ch Marak	15/MCM/17
17	Rickystar Sumer	15/MCM/18
18	Wabangtula	15/MCM/19
19	Tangnyiu Shiu	15/MCM/20
20	Mudang Mamung	15/MCM/21
21	Meena Mili	15/MCM/22
22	Enrico G Momin	15/MCM/23
23	Sashisunup Longkumer	15/MCM/24
24	Nukshitula Longkumer	15/MCM/25
25	Rajini Timung	15/MCM/26
26	Cheara R Marak	15/MCM/27
27	Bethseba Aurelia D Areng	15/MCM/28
28	Nisme M Sangma	15/MCM/29

29	Ojing Taloh	15/MCM/31
30	Chenkim N Walem	15/MCM/32
31	Abdul Hakim	15/MCM/33
32	Kwmnta Bargayary	15/MCM/36
33	Jwngshar Basumatary	15/MCM/37
34	Ratul Paul	15/MCM/38
35	N Chuhyem Konyak	15/MCM/39
36	Ketoukho O Rhutsu	15/MCM/40
37	Abu Mohammad Iqubal Hussain	15/MCM/41
38	Temjen Temsu	15/MCM/42
39	Juel Debbarma	15/MCM/43
40	Kaushik Basumatary	15/MCM/45
41	Ephar M Sangma	15/MCM/46
42	Michi Ankha	15/MCM/48
43	S Hriiziini	15/MCM/49
44	Dikki N Marak	15/MCM/50
45	Akash Chetry	15/MCM/51
46	Khasnur Rohman	15/MCM/52
47	Omern Pertin	15/MCM/54
48	Batskhemlang Iangrai	15/MCM/56
49	Shankupar Kharsyntiew	15/MCM/57
50	Remember Nongtdu	15/MCM/58
51	Badondor Syiemlieh	15/MCM/59
52	Maitshaphrang Sungoh	15/MCM/60
53	Pangertoshi	15/MCM/61
54	Rahul Ahmed	15/MCM/62
55	Anarul Islam	15/MCM/63
56	Sengkal R Marak	15/MCM/64
57	Pangnyei W S Konyak	15/MCM/65
58	Bijit Kalita	14/BCM/03
59	Rimpi Kaur	14/BCM/04
60	Chiranjita Roy	14/BCM/08
61	Saju Brahma	14/BCM/09
62	Radhe Pullo	14/BCM/10
63	Subrata Sharma	14/BCM/11
64	Deep Jyoti Rajbongshi	14/BCM/12
65	Anirban Roy	15/BCM/01
66	Bishal Phukan	15/BCM/02
67	Pallabi Boro	15/BCM/03
68	Ryan Bubka M Sangma	15/BCM/04
69	Mintu Roy	15/BCM/05

70	Kennysoka Lamin Gadew	15/BCM/07
71	Baladonbpk Khylllep	15/BCM/08
72	Rabindra Nath Basumatary	15/BCM/09
73	Vishuthazo Kirha	15/BCM/10
74	Jyoti Zheddu Tailor	15/BCM/24

Dr Abdur Rashid
HOD, Commerce