SHRI GURU RAM RAI UNIVERSITY
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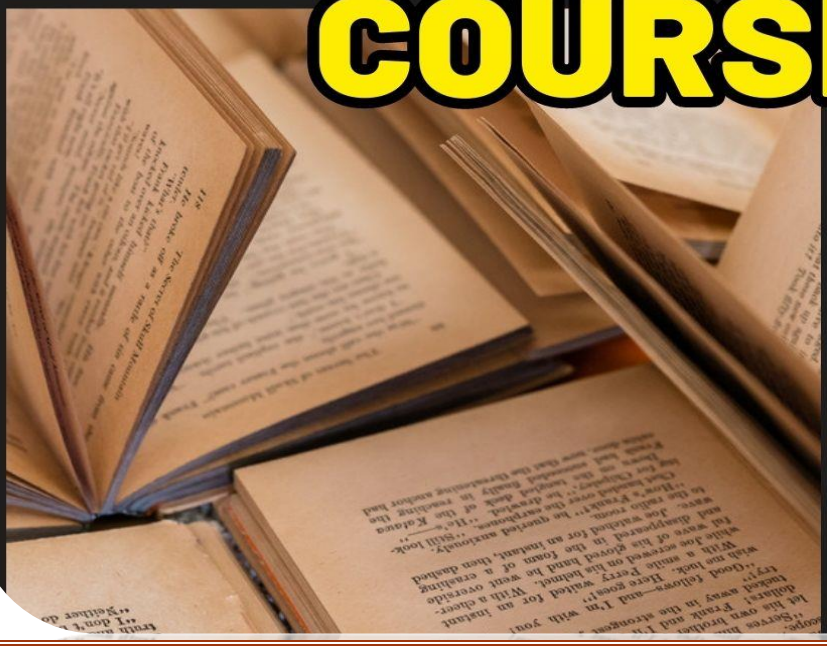
VALUE ADDED COURSES



SGRRU

SGRR UNIVERSITY

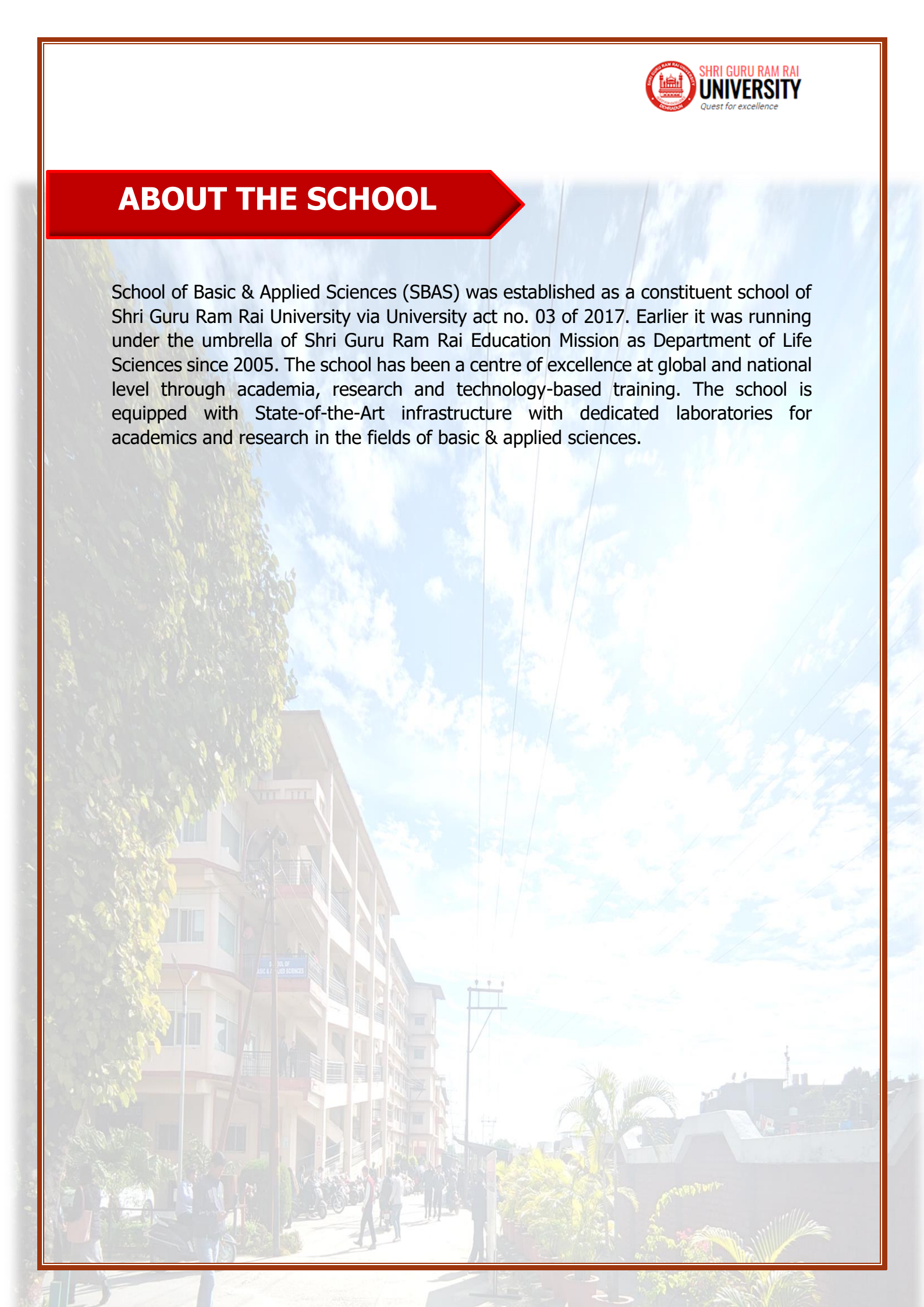
Brochure of Value-Added Courses

School of Basic & Applied Sciences (SBAS)

SHRI GURU RAM RAI UNIVERSITY
Quest for excellence

ABOUT THE SCHOOL

School of Basic & Applied Sciences (SBAS) was established as a constituent school of Shri Guru Ram Rai University via University act no. 03 of 2017. Earlier it was running under the umbrella of Shri Guru Ram Rai Education Mission as Department of Life Sciences since 2005. The school has been a centre of excellence at global and national level through academia, research and technology-based training. The school is equipped with State-of-the-Art infrastructure with dedicated laboratories for academics and research in the fields of basic & applied sciences.



Index

	Course Code	Course Name	Contact Hours	Page No.
Sr. No.	**Introduction to value added Courses and guidelines**		**-**	**4-6**
1	VCSBAS001	Completive Maths	30 Hours	8
2	VCSBAS002	Disaster Management	30 Hours	9-12
3	VCSBAS003	Sustainable Ecotourism	30 Hours	11-12
4	VCSBAS004	Bio-fertilizer Production Technology	30 Hours	13-14

INTRODUCTION

The ever-changing global scenario makes the world more modest and needs high levels of lateral thinking and the spirit of entrepreneurship to cope up with the emergent challenges. Many a times, the defined skill sets that are being imparted to students today with Programme Specific Objectives in educational institutions become redundant sooner or later due to rapid technological advancements. No university curriculum can adequately cover all areas of importance or relevance. It is important for higher education institutions to supplement the curriculum to make students better prepared to meet industry demands as well as develop their own interests and aptitudes.

Objectives The main objectives of the Value-Added Course are:

- ✓ To provide students an understanding of the expectations of industry.
- ✓ To improve employability skills of students.
- ✓ To bridge the skill gaps and make students industry ready.
- ✓ To provide an opportunity to students to develop inter-disciplinary skills.
- ✓ To mould students as job providers rather than job seekers.

Course Designing The department interested in designing a Value Added Course should undertake Training Need Analysis, discuss with the generic employers, alumni and industrial experts to identify the gaps and emerging trends before designing the syllabus.

Conduction of value added courses :

Value Added Course is not mandatory to qualify for any programme and the credits earned through the Value-Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. It is a teacher assisted learning course open to all students without any additional fee.

Classes for a VAC are conducted during the RESERVED Time Slot in a week or beyond the regular class hours The value-added courses may be also conducted during weekends / vacation period. A student will be permitted to register only one Value Added Course in a Semester.

student will be encouraged to opt for the VAC offered by his/her parent Department/Faculty. Industry Experts / Eminent Academicians from other Institutes are eligible to offer the value-added course. The course can be offered only if there are at least 5 students opting for it. The students may be allowed to take value added courses offered by other departments after obtaining permission from Dean offering the course. The duration of value added course is 30 hours with a combination 18 hours (60%) of theory and 12 hours (40%) of practical. However, the combination of theory and practical shall be decided by the course teacher with the approval of the Dean

GUIDELINES FOR CONDUCTING VALUE ADDED COURSES

- Value Added Course is not mandatory to qualify for any program.
- It is a instructor supported learning course open to all students without any added fee.
- Classes for VAC will be conducted during the **RESERVED** Time Slot in a week or beyond the regular class hours.
- The value-added courses may be also conducted during weekends / vacation period.
- A student will be permitted to register only one Value Added Course in a Semester.
- Students may be permitted to enrol in value-added courses offered by other departments/ Schools after obtaining permission from the Department's Head offering the course.

DURATION AND VENUE

- The duration of value-added course should not be less than 30 hours.
- The Dean of the respective School shall provide class room/s based on the number of students/batches.
- VAC shall be conducted in the respective School itself.

REGISTRATION PROCEDURE

The list of Value-Added Courses, along with the syllabus, will be available on the University Website. A student must register for a Value-Added Course offered during the semester by completing and submitting the registration form. The Department Head shall segregate according to the option chosen and send it to the Dean of the school offering the specific Value-Added Courses.

- Each faculty member in charge of a course is responsible for maintaining Attendance and Assessment Records for candidates who have registered for the course.
- The Record must include information about the students' attendance and Assignments, seminars, and other activities that were carried out.

- The record shall be signed by the Course Instructor and the Head of the Department at the end of the semester and kept in safe custody for future verification.

- Each student must have a minimum of 75% attendance in all courses for the semester in order to be eligible to take certificate.

- Attendance requirements may be relaxed by up to 10% for valid reasons such as illness, representing the University in extracurricular activities, and participation in NCC.

- The students who have successfully completed the Value Added Course shall be issued with a Certificate duly signed by the Authorized signatories

SCHOOL OF BASIC & APPLIED SCIENCES

Competitive MATHS

Course Code: VCSBAS001

Course Objectives:

1. Students will recognize problem solving techniques appropriate to a given situation.
2. Student will acquire new skills and abilities, the identification of assumptions.

Course Outcomes:

1. Remembering the meaning of Non Verbal and Verbal reasoning.
2. Understanding the concept of series completion on simple problems.
3. Applying the concept of time and work on real life problems.
4. Analysing the problem on blood relation with solved examples.

Module I: Non-verbal Reasoning Tests, Completion of series, Classification, Non-verbal analogy.
Module II: Verbal Reasoning tests, Series completion, Verbal classification, Verbal analogy.
Module III: Simplification, Problems on ages, Time and work.
Module IV: Coding and decoding, Blood relationship.

Reference Books:

1. Aggarwal, R. S., Quantitative Aptitude, S. Chand & Company Ltd, Ram Nagar, New Delhi, 2013.

2. Thorpe, Edgar., Test of Reasoning for competitive examinations, IV Ed. Tata McGrawHill Publishing Company Ltd, New Delhi.

Disaster Management

Course Code: VCSBAS002

Course Objectives:

1. To provide students an exposure to disasters, their significance & types
2. To ensure that students begin to understand the relationship between vulnerability disasters, disasters prevention & risk reduction
3. To enhance awareness of institutional processes in the country.
4. To develop rudimentary ability to respond to their surroundings with potential disasters response in areas where they live with due sensitivity

Course Outcomes:

Module I: Introduction to Disasters. Definition, Disaster, Hazard, vulnerability, Resilience, Risks-Disasters. Types of Disasters: Earthquakes, Landslides, Flood, Drought, Fire, Etc. Classification, causes, impacts, including social, economic, political, environmental, health, psychosocial etc. Differential impacts in terms of caste, class, gender, age location, disability Global trends in disasters: urban disasters, Pandemics, complex emergencies, climate changes. Do's and Don'ts during various types of Disasters

Module II: Approaches to Disaster Risk Reduction, Disaster Cycle, Phases Culture of safety Prevention, mitigation & preparedness community based DRR. Structural, nonstructural measures Roles & responsibilities of community. Panchayati Raj Institutional Processes & framework of state & central level. State Disasters Management authority (SDMA) Early warning system. Advisories form appropriate agencies.

Module III: Inter-Relationship between Disasters and Development Factors affecting vulnerabilities, Differential, Impact of Development projects such as dams, embankments, changes in land use etc. climate change Adaption IPCC scenario & scenarios in the context of India Relevance of indigenous knowledge, appropriate technology & local resources.

Module IV: Disasters Management in India Hazard & Vulnerability profile of India, components of disasters relief water, food, sanitation, shelter, of health, waste management institutional arrangements. Mitigation, response & Preparedness, disaster management act & policy, other related Policies Plans, Programmes & legistation – Role of GIS & information technology components in preparedness, risk assessment, response & recovery Phases of disaster, Disaster Damage Assessment.

Module V: Disasters Management: Applications, case studies & field work Landslides hazard zonation, case studies: earthquakes vulnerability assessment of Buildings

infrastructure. Case Studies: Drought Assessment. Case studies: coastal flooding pluvial flooding case studies, forest fire case studies manmade disasters case studies, space based inputs for disasters mitigation & management & field works related to disaster management.

Reference Books:

1. Singhal J.P Disaster Management, Laxmi Publication, zolo ISBN- 10 9380386427 ISBN-13 978- 938038623
2. Tushar Bhattacharya, "Disaster Science & Management". Mcgraw All India Education Pvt. Ltd. 2012 ISBN-10 1259007367 ISBN-13 978-1259007361
3. Gupta Anil K Sreeja S. Nair Environmental knowledge for disaster risk Management, NIDM, New Delhi 2011
4. Kapur Anu vulnerable India. A Geographical Study of disasters IIAS & Sagar Publishers, New Delhi, 2010
5. Government of India Disaster Management Act, Government of India New Delhi, 2005
6. Government of India National Disaster Management policy. Zoog.

Sustainable Ecotourism

Course Code: VCSBAS003

Course Objectives:

1. To give the students a way to evaluate and understand ecotourism in their context.
2. To increase the benefits and to reduce the negative impacts caused by tourism for destinations. This can be achieved by: Protecting natural environments, wildlife and natural resources when developing and managing tourism.

Course Outcomes:

1. Know about diverse nature of tourism, including culture and place, global/local perspectives, and experience design and provision.
2. Understand the contextualize tourism within broader cultural, environmental, political and economic dimensions of society.
3. Apply marketing strategies for tourism destinations and organizations
4. Propose and conduct a research project to inform tourism practice
5. Work collaboratively in groups, both as a leader and a team member, in diverse environments, learning from and contributing to the learning of others.

Module I Introduction to Ecotourism

History and scope of ecotourism; Components of ecotourism; Principles and characteristics of ecotourism; Ecotourism planning: Site diagnostics, Target groups; Ecotourism industry and its stake holders; Resources and products of ecotourism; Commercialization of ecotourism.

Module II: Types of Ecotourism

Tourism vs. Ecotourism; Types: Agro-ecotourism, Geo- ecotourism, Cultural-ecotourism – tangible and intangible heritages and tourism, Sensitive areas of ecotourism; Ecotourism management plans.

Module III: Ecotourism resources in India and Uttarakhand

Eco-regions; Vegetation types; Protected areas; Endemism and biodiversity hotspots; Historical monuments and historical sites; Adventure ecotourism destinations; Ecotourism potential of Uttarakhand

Module IV Community participation in ecotourism

Present scenario, Future prospects (year-round ecotourism); Sustainability of ecotourism; Ecotourism in developed countries; Community based ecotourism: case

studies; Joint forest management, Role of NGOs ;Ethical and legal aspects; Eco-travel and environmental awareness; Impacts of ecotourism, Green report card, Eco-labelling; Environmental sustainability practices.

References:

1. Ecotourism and Sustainable Development: Who Owns Paradise? Martha Honey Island Press, 999

2.Governing the Wild: Ecotours of Power Stephanie Rutherford *University of* Minnesota Press, 2011

3.Heritage and Tourism: Places, Imageries and the Digital Age Edited by Linde Egberts and Maria D. Alvarez *Amsterdam University Press, 2018*

4.Overtourism: Lessons for a Better Future Edited by Martha Honey and Kelsey Frenkel *Island Press, 2021*

Bio-fertilizer Production Technology

Course Code: VCSBAS004

Course Objective :

1. To demonstrate the low-cost media preparation and impart training of eco-friendly agricultural inputs in biofertilizer production.

Course outcomes :

1. Understand the role of microorganism in improving the fertility of soil and also in control the pest and other pathogens.
2. Will know the techniques involved in mass production, quality control and application of Bioinoculants in organic farming.
3. Students will have an opportunity to work in research laboratory, biofertilizer industry and can also be an bio-entrepreneur.
4. Ability to distinguish the types of biofertilizers and methods of application in farmers field. Development of integrated management for best results using nitrogenous and phosphate biofertilizers.

Module -I: Introduction, History and concept of Bio fertilizers, status scope and importance of Bio fertilizers, Classification of Bio fertilizers. Nitrogen fixation.

Module II : Structure and characteristic features of bacterial Bio fertilizers- Azospirillum, Azotobacter, Bacillus, Pseudomonas, Rhizobium and Frankia; Cyanobacterial biofertilizers- Anabaena, Nostoc, Haplodiplontic and fungal biofertilizers- AM mycorrhiza and ectomycorrhiza.

Module III: Production technology: Strain selection, sterilization, growth and fermentation, equipment, mass production of carrier based and liquid bio fertilizers. FCO specifications and quality control of bio fertilizers.

Module IV : Application technology for seeds, seedlings, tubers, sets etc. Biofertilizers -Storage, shelf life, quality control and marketing. Factors influencing the efficacy of bio fertilizers.

References:

- B. Giri et al. (eds.), Biofertilizers for Sustainable Agriculture and Environment, Soil Biology 55.
- Dinesh Biofertilizers (Skill Enhancement Course) For B.Sc. Botany Classes, by Dr. Anil K. Thakur, Dr. Susheel K.

- Spaink HP, Kondorosi A, Hooykaas PJJ (eds) (1998) The Rhizobiaceae. Kluwer Academic Publishers, Dordrecht
- Biofertilizers and Biopesticides, by Krishnendu Acharya,
- Handbook of Microbial Biofertilizers, by M. K. Rai