VAC

II Semester
M. Sc. - Chemistry
M. Sc. Pharmaceutical Chemistry

VAC (Value Added Courses)

Theory syllabus

Scheme A-1(For course of science Discipline having Major Practicum Component)

Part-A Introduction			
PROGRAMME NAME : PG Degree		**Class M.Sc. II Semester** CHEMISTRY	**Session 2025-26**
1	Course Code	EESC (Employability, Entrepreneurship. Skills Courses	
2	Course Title	Career and innovation skills for Science Graduates	
3	Course type	VAC (Value Added Courses)	
4	Pre-requisite (if any)	To study this course a student must have had One Year PG diploma certificate or Four year (Hon's/Hon's with research degree course).	
5	Course Learning Outcomes (CLO)	• To identify personal strengths, career interests, and potential pathways in science-related fields. • To understand effective communication and collaboration skills in academic and professional contexts. • To apply problem-solving and design thinking methods to real-world scientific challenges. • To analyze the components of innovation and entrepreneurship within science and technology domains. • To develop basic career tools such as resumes, cover letters, and personal pitch presentations. • To integrate professional ethics, digital literacy, and a growth mindset into career planning.	
6	Credit Value	2	
7	Total Marks	Max. Marks 70+30	Min Passing Marks :40

PART-B: Content of the Course		
Total No. of Lectures- Tutorials- Practical (in hour per week): 2 hour per week		
Unit	**Topics**	**No. of Lectures**
I	**Career Planning and Personal Development** • Career mapping: identifying strengths, values, and interests • Resume building, cover letters, and LinkedIn optimization • Soft skills: time management, adaptability, and emotional intelligence • Growth mindset and lifelong learning	06
II	**Communication and Professional Skills** • Scientific and technical communication: writing abstracts, reports, and emails • Presentation and public speaking skills • Interview preparation and group discussion techniques • Digital literacy and workplace etiquette	06
III	**Innovation, Design Thinking, and Problem Solving** • Introduction to creativity and innovation in science • Design thinking framework (Empathize, Define, Ideate, Prototype, Test) • Case studies of scientific innovation and social impact • Tools: brainstorming, SCAMPER, mind-mapping	06
IV	**Entrepreneurship and Start-up Ecosystem** • Basics of entrepreneurship: idea to MVP • Business model canvas and lean start-up principles • Science-based start-ups and technology commercialization • Support systems: incubators, accelerators, and funding avenues	06
V	**Intellectual Property and Ethics in Innovation** • Introduction to IP: patents, copyrights, trademarks, and licensing • Innovation ethics: social responsibility, data integrity, and sustainability • Open science and collaborative innovation • National Innovation and Start-up Policy (NISP), NEP 2020, and Atal Innovation Mission	06

PART C: Learning Resources	
Text Books, Reference Books, Other resources	
Suggested Reading	1. Tina Seelig -Insight Out: Get Ideas Out of Your Head and Into the World 2. Tim Brown-Change by Design 3. IDEO.org -The Field Guide to Human-Centered Design (Free download) 4. Yashavant Kanetkar & Pradeep Motwani -Let Us Communicate 5. WIPO-Understanding Intellectual Property 6. Government of India -National Innovation and Startup Policy for Students and Faculty (2020) 7. UGC Guidelines on Life Skills (Jeevan Kaushal) 8. The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators By Jeff Dyer, Hal Gregersen & Clayton M. Christensen 9. Design Your Life: How to Build a Well-Lived, Joyful Career By Bill Burnett & Dave Evans (Stanford d. school) 10. Careers in Science: A Complete Guide to Career Paths in Science By American Association for the Advancement of Science (AAAS) 11.. Innovation and Entrepreneurship in India: A Practical Guide By Dr. V. S. Mahajan (Indian Author) 12. The Lean Startup By Eric Ries
Suggested equivalent online courses	1. Google Project Management: Professional Certificate by: Google on Coursera 2. IBM Data Science Professional Certificate by: IBM on Courser 3. Design Thinking for Innovation by: University of Virgini on Coursera 4. Entrepreneurship in Emerging Economies by: Harvard University on edX 5. Career Success Specialization by: University of California, Irvine on Coursera 6. Innovation and Entrepreneurship Program by: Indian Institutes of Technology (IITs) on NPTEL (National Programme on Technology Enhanced Learning) 7. Soft Skills Development by: University Grants Commission (UGC) on SWAYAM 8. Digital Skills: Artificial Intelligence by: Accenture o Future Learn.

PART-D : Assessment and Evaluation		
Suggested continuous Evaluation Methods Maximum Marks: 100 Continuous Comprehensive Evaluation (CCE):40 Marks University Examination(UE): 60		
Internal Assignment Continuous Comprehensive Evaluation CCE-(40)	Class Test Assignment/Presentation	Total (40)
External Assignment: University Exam Section: 60 Time: 03.00 Hour	Section (A): Objective type question Section (B): Short Question Section (C): Long Questions	Total (60)