

BTY107M:PROGRAMME ORIENTATION-I

L:2 T:0 P:0 Credits:2

Course Outcomes: Through this course students should be able to

CO1 :: understand the structure, outcomes, academic framework, and career opportunities associated with their academic program

CO2 :: develop awareness of emerging technologies, industry trends, and future opportunities in the discipline

CO3 :: explore EDU-Revolution initiatives and identify opportunities for academic enrichment and experiential learning

CO4 :: identify suitable career pathways and develop an understanding of industry expectations and professional growth

CO5 :: prepare a professional portfolio, Dream CV, placement and an initial career development roadmap aligned with long-term career goals

Unit I

Academic Program Overview : University and Program Overview: School Vision and Mission, Program Introduction and Objectives, Program Duration and Academic Structure, Curriculum Structure (Definition, purpose & importance): Core, Elective, and Specialization Courses, Credit Distribution and Course Progression, Prerequisites and Elective Baskets, Salient Features of the Program

Unit II

Emerging Technologies and Future of the Discipline : Evolution of Technology: Industry 1.0 to Industry 5.0, Digital Transformation, Sustainable Development Goals (SDGs), Emerging Technologies: Artificial Intelligence and Machine Learning, Internet of Things (IoT), Blockchain, Metaverse, 5G and Beyond, Edge Computing, Digital Twins, Robotics and Industrial Automation, Intelligent Sensors, Hardware Security, Medical Informatics, Clean Energy Technologies, Chip Design and Semiconductor Manufacturing, Intelligent Transportation Systems (ITS), Future Workforce: World Economic Forum Future Jobs Report, Professional Society Perspectives, Skills required for future careers

Unit III

EDU-Revolution and Academic Enrichment : Introduction to EDU-Revolution: Vision and Objectives, Importance for Student Development, Learning Opportunities: Student-Centric Revenue Generation Model (SCRGM), Projects, Internship Beyond Curriculum, Technical Competitions and Hackathons, Research, Innovation, and Entrepreneurship, MOOCs (NPTEL/SWAYAM)/ Certifications, Recognition of Prior Learning (RPL), Community Development Projects, Social Media Presence, Academic Benefits: Course Equivalence and Grade Upgradation, Attendance and Duty Leave Benefits, Earn while Learn, Active Participation in Decision Making, Academic Transcript Enhancement, Participation Process: UMS Registration and Application Process, Initiative Selection, Verification Process, Role of Standing Committee, Student Representation in Decision-Making Committees

Unit IV

Career Pathways, Career Goal Setting and Professional Development : Career Pathways: • Overview of various career pathways after graduation: Corporate Careers (Placements), Entrepreneurship & Startups, Higher Studies, Government Services, Research & Innovation, International Career Opportunities, • Understanding the expectations, competencies, opportunities, and challenges associated with each pathway, Career Aspiration Mapping: Students shall identify their preferred career pathway and prepare a Career Aspiration Report containing: For Corporate Career: Dream Company (Google, Microsoft, TCS, Nvidia, etc.), Preferred Job Role, Target Placement Package (CTC), Preferred Work Location, Skills required, Technical certifications required, Internship roadmap, Project roadmap, For Entrepreneurship: Startup idea/domain, Problem statement, Target customer, Expected revenue milestone, Funding aspiration, Professional Exposure: Interaction with Industry Leaders, Alumni Success Stories, Study Abroad Opportunities, Product Pitching, Networking and Professional Communication

Unit V

Unit V **Professional Portfolio Development** : Introduction to Professional Portfolio: Purpose and Importance, Portfolio Components: Academic Projects, Startup/ Entrepreneurship, Certifications, Internships, Competitions, Research Publications, Patents and Copyrights, Extracurricular Activities, Leadership and Volunteering, Portfolio Enhancement: Continuous Portfolio Development, Digital Portfolio Platforms, Personal Branding, Career-Aligned Portfolio Development: Students shall prepare a portfolio aligned with their selected career pathway including: Career aspiration statement, Skill matrix, Certifications, Projects, Internship evidence, Hackathons, Publications, Startup achievements, Leadership activities, Community engagement, Technical profiles (GitHub, LinkedIn, Kaggle, Behance, etc.), Semester-wise improvement plan

Unit VI **Dream CV and Career Roadmap** : Dream CV: Students shall prepare a Dream CV based on their selected career pathway. The Dream CV shall include: Dream Company / Organization / University / Service, Dream Job Role, Target Placement Package (if placement), Target Startup Revenue (if entrepreneurship), Target University & Program (if higher studies), Target Government Service/Post (if government exams), Career Objective, Required Competencies, Certifications, Projects, Internships, Publications, Technical Skills, Soft Skills, Career Readiness and Gap Analysis: Students will identify Current Competencies, Desired Competencies, Skill Gap, Learning Resources, Timeline for Completion, Career Roadmap: Preparation of Individual Development Plan (IDP), Semester-wise Milestones, Certification Plan, Internship Plan, Placement/Higher Studies Preparation Timeline, Gantt Chart

Text Books: 1. CAREERS IN BIOTECHNOLOGY by INSTITUTE FOR CAREER RESEARCH, CREATESPACE
INDEPENDENT PUBLISHING PLATFORM

References: 1. CAREER OPPORTUNITIES IN BIOTECHNOLOGY AND DRUG DEVELOPMENT by TOBY
FREEDMAN, COLD SPRING HARBOR LABORATORY