**A.V.V.M. SRI PUSHPAM COLLEGE (AUTONOMOUS),**

**POONDI-613 503, THANJAVUR**

**1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific outcomes (PSOs) and Course Outcomes (COs) of the Programmes offered by the Institution**

# COURSE OUTCOMES

# M.Sc., BIOTECHNOLOGY (2017 – 2018)

| Semester | Category | Paper Code | Title of the Paper | Outcome |
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| I | Core | 17P1BTC1 | Biochemistry | • To enable the students to understand the co-valent bonds of Chemicals and Principles of Thermodynamics.<br>• To give adequate knowledge on the Chemistry of Proteins, Amino Acids and lipids<br>• To familiarize the Separation Technique and purifications of biomolecules. |
| | Core | 17P1BTC2 | Advances in Microbiology | • To study the details of various Microbes.<br>• To study the diversity of microbes<br>• To study the microbial evolution, diseases etc. |
| | Core | 17P1BTC3 | Environmental Biotechnology | • To understand the environment.<br>• To study the sources and effect environmental pollution.<br>• To study the measures to treat the treatment of environmental pollution.<br>• To study the solid waste management. |
| | Core | 17P1BTCP1 | Practical – I (Biochemistry, Microbial and Environmental Biotechnology) | • To understand the Chemistry of Proteins, Sugars, Nucleic acids.<br>• To study the microbial Techniques.<br>• To understand the Biochemistry and advances in Microbiology |
| | Major Elective-I | 17P1BTEL1A<br>17P1BTEL1B<br>17P1BTEL1C | Immunology and Immuno technology/<br>Entrepreneur skill Development /<br>Molecular Modeling And Drug Designing | • To study the immune system.<br>• To study the immunity against invaded micro-organisms.<br>• To study the various immunity Technology.<br>• To study the Allergic reactions and Auto immune diseases.<br>(or)<br>• To know Entrepreneurship, Entrepreneurial management and functions.<br>• To study the processes, tools and best practices in developing new products. |

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| | | | | • To study about the role of entrepreneurial ventures in the national economy.<br>• To understand the entrepreneurial finance.<br>• To understand the concept and meaning of science and technology.<br>(or)<br>• To study the concept of molecular modeling and Molecular mechanics.<br>• To study the Molecular dynamics simulation methods.<br>• Recent advances in drug design methodologies.<br>• To study the Software tools for modeling bio-molecules.<br>• To study the Molecular docking. |
| II | Core | 17P2BTC4 | Molecular Genetics | • To study the mutation, mutagenesis and genetics of microbes.<br>• To study the DNA Replication, Transcription, Translation and Oncogenes.<br>• To study the Anti-sense molecules and Ribozyme Technology. |
| | Core | 17P2BTC5 | Plant and Animal Biotechnology | • To understand the Animal and Plant Biotechnology.<br>• To study the plant cell & culture aspects.<br>• To study the micro propagation of protoplast & culture.<br>• To study the mass culture and other Animal cell culture Techniques. |
| | Core | 17P2BTC6 | Enzyme Biotechnology | • To study the enzymes and their properties.<br>• To study the uses and applications of enzymes. |
| | Core | 17P2BTC7 | Nano biotechnology | • To know about the Nanotechnology.<br>• To learn about the nanoparticles and targeted drug delivery.<br>• To learn the improved diagnostic products and techniques. |

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| | | | | • To study about the applications of nanomaterials. |
| | Core | 17P2BTC8 | Genomics and Proteomics | • To learn the Genome mapping, assembly and comparison<br>• To understand, Sequence based approaches and Microarray based approaches<br>• A thorough study on Proteomics.<br>• To understand, Protein-protein interactions and Applications of proteomics. |
| | Core | 17P2BTCP2 | Practical – II (Molecular Genetics, Plant and Animal Biotechnology, Enzyme Biotechnology and Industrial Biotechnology, Nano biotechnology, Proteomics & Genomics) | • To study the Isolation of DNA, Electrophoresis and GUS Assay.<br>• To study the Tissue Culture methods. |
| | Major Elective-II | 17P2BTEL2A<br>17P2BTEL2B<br>17P2BTEL2C | Bio-Instrumentation and Biometry<br>/<br>Bio-informatics, IPR & Nanotechnology/<br>Bio-Informatics, Intellectual Property Rights & Nanotechnology | • To enrich the knowledge of students on Bio-instrumentation.<br>• To enhance the knowledge on Biometry.<br>• To know about chromatography, PCR, ELISA and Electrophoresis.<br>(or)<br>• To impart knowledge on various occupational health hazards and also safety measures to be taken in the work place.<br>(or)<br>• To know the ultra structure of Prokaryotic and Eukaryotic cellular organisms.<br>• With the help of instruments, to know the basic principles of protein.<br>• To know the internet and E-mail.<br>• General aspects of patenting.<br>• To know about Nanotechnology. |
| | Core | 17P3BTC9 | Bio-Process Technology | • To study the Bioprocess engineering.<br>• To study the microbial strain involved in Bioprocess.<br>• To study the food processing. |

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| III | Core | 17P3BTC10 | Clinical biochemistry | • To study the lab setup and safety measures<br>• To learn about the metabolic disorders<br>• To study about the disorders of kidney and liver<br>• To know about drug design and their types |
| | Core | 17P3BTC11 | Recombinant DNA Technology | • To study about the techniques in gene manipulation.<br>• To study the cloning strategies, DNA Amplification.<br>• To study the PCR and other Techniques. |
| | Core | 17P3BTC12 | Aquatic Biotechnology | • To study the scope of aquaculture.<br>• To know about the disease management of aquatic organism.<br>• To know about the cryopreservation techniques in aquatic organism.<br>• To study about the transgenic fishes. |
| | Core | 17P3BTCP3 | Practical – III (Bioprocess Technology, Recombinant DNA Technology and Clinical Chemistry) | • To know the r-DNA Technology.<br>• To know the Bioprocess Technology.<br>• To know the Biodiversity. |
| | EDC | 17P3BTEDC | Fundamentals of Biotechnology | • Differentiate the organisms by its cell structure.<br>• Explain the arrangement of Genes and their intraction. |
| | Core | 17P4BTC13 | Research Methodology | • The Paper aims to train students in the statistical analysis and presentation of the data.<br>• To write the report/thesis/dissertation and or for publications in appropriate research journals,<br>• The aim of the Paper thus is to lay a strong foundation for the student for thesis writing, editing, analysis and interpretation of the generated data with hands on experience with model sums. |

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| IV | Core | 17P2BTC14 | Industrial Biotechnology | • To know the Biology of Industrially important organisms.<br>• To know the commercial production of Humilin, Ethanol, citric acid etc.<br>• To know the Enzyme Technology and other microbial products. |
| | Major Elective-III | 17P4BTEL3A<br>17P4BTEL3B<br>17P4BTEL3C | Biosafety and Bioethics/<br>Biodiversity and Bio resources/<br>Enzymology | • To study the Biosafety and its guidelines.<br>• To study the IPR and patents.<br>• To study the Agreement and Treaties.<br>(or)<br>• To study the diversity of genes, species of eco system.<br>• To study the Loss, uses, values, of conservation of Bio-diverting.<br>(or)<br>• To learn the Classification, nomenclature & general properties.<br>• To study the Enzyme kinetics.<br>• To understand the Techniques of enzyme immobilization & their applications.<br>• To study the Industrial utilization of enzymes and Enzyme therapy |
| | CN | 17P4BTCN | Comprehension | • To better for the preparations of Competitive Exams in advance. |
| | Project | 17P4BTPR | Project | • Undertake problem identification, formulation and solution.<br>• Demonstrate the knowledge, skills and attitudes. |