



# VELS



INSTITUTE OF SCIENCE, TECHNOLOGY  
& ADVANCED STUDIES (VISTAS)

(DEEMED TO BE UNIVERSITY Estd. u/s 3 OF THE UGC ACT, 1956)

**NAAC ACCREDITED**  
PALLAVARAM - CHENNAI - INDIA

## School of Life Sciences



## Brochure

(Programme and Courses offered)  
2016-2017

PV Vaithiyalingam Road, Velan Nagar, Pallavaram, Chennai - 600117.

Phone: + 91 - 44 - 2266 2500 / 2501 / 2502 / 2503

Website: [www.velsuniv.ac.in](http://www.velsuniv.ac.in)

## About the School

The **life sciences** comprise the branches of science that involve the scientific study of life and organisms – such as microorganisms, plants, and animals including human beings. Life science is one of the two major branches of natural science, the other being physical science, which is concerned with non-living matter. By definition, biology is the natural science that studies life and living organisms, with the other life sciences being its sub-disciplines. Some life sciences focus on a specific type of organism. For example, zoology is the study of animals, while botany is the study of plants. Other life sciences focus on aspects common to all or many life forms, such as anatomy and genetics. Some focus on the micro scale (e.g. molecular biology, biochemistry) other on larger scales (e.g. cytology, immunology, ethology, ecology). Another major branch of life sciences involves understanding the mind – neuroscience.

## SCHOOL OF LIFE SCIENCES

### Department of Biochemistry

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|----|-----------------------------|-----|-----------------------|
| 1. | B.Sc. Biochemistry          | ... | 3 years (6 semesters) |
| 2. | M.Sc. Advanced Biochemistry | ... | 2 years (4 semesters) |
| 3. | M.Phil. Biochemistry        | ... | 1 years (2 semesters) |
| 4. | Ph.D. Biochemistry          | ... | 3 years               |

### Department of Bio-informatics

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|----|------------------------|-----|-----------------------|
| 1. | B.Sc. Bio-computing    | ... | 3 years (6 semesters) |
| 2. | M.Sc. Bioinformatics   | ... | 2 years (4 semesters) |
| 3. | M.Phil. Bioinformatics | ... | 1 years (2 semesters) |
| 4. | Ph.D. Bioinformatics   | ... | 3 years               |

### Department of Biotechnology

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|----|--|-----|-----------------------|
| 1. | B.Sc. Biotechnology                                  | ... | 3 years (6 semesters) |
| 2. | M.Sc. Biotechnology                                  | ... | 2 years (4 semesters) |
| 3. | M.Sc. Medical Biotechnology and<br>Clinical Research | ... | 2 years (4 semesters) |
| 4. | M.Phil. Biotechnology                                | ... | 1 years (2 semesters) |
| 5. | Ph.D. Biotechnology                                  | ... | 3 years               |

### Department of Microbiology

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|----|---------------------------------|-----|-----------------------|
| 1. | B.Sc. Microbiology              | ... | 3 years (6 semesters) |
| 2. | M.Sc. Immunology & Microbiology | ... | 2 years (4 semesters) |
| 3. | M.Phil. Microbiology            | ... | 1 years (2 semesters) |
| 4. | Ph.D. Microbiology              | ... | 3 years               |

## PROGRAM AND COURSE DETAILS 2016-2017

| PROGRAMME NAME       | COURSE CODE | SUBJECT NAME                             |
|----------------------|-------------|--|
| B.Sc. - Biochemistry | 15BBC001    | CELL BIOLOGY                             |
|                      | 15BBC002    | PRACTICAL - QUALITATIVE ANALYSIS         |
|                      | 15BBC003    | PRACTICAL - MICROBIOLOGY                 |
|                      | 15BBC101    | ALLIED MICROBIOLOGY                      |
|                      | 15LEN001    | ENGLISH PAPER - I                        |
|                      | 15LFR001    | FRENCH PAPER - I                         |
|                      | 15LHN001    | HINDI PAPER - I                          |
|                      | 15LTA001    | TAMIL PAPER - I                          |
|                      | 15BBC004    | INTRODUCTION TO BIOMOLECULES             |
|                      | 15BBC005    | PRACTICAL - TITRIMETRY                   |
|                      | 15BBC006    | PRACTICAL - CELL BIOLOGY                 |
|                      | 15BBC102    | FUNDAMENTALS OF COMPUTERS AND STATISTICS |
|                      | 15LEN002    | ENGLISH PAPER - II                       |
|                      | 15LFR002    | FRENCH PAPER - II                        |
|                      | 15LHN002    | HINDI PAPER - II                         |
|                      | 15LTA002    | TAMIL PAPER - II                         |
|                      | 15NSS255    | NSS - I                                  |

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|----------------------|----------|---|
| B.Sc. - Biochemistry | 15CBBC31 | BIOCHEMICAL TECHNIQUES                  |
|                      | 15CBBC32 | BIOINFORMATICS                          |
|                      | 15LENG31 | ENGLISH PAPER - III                     |
|                      | 15LFRE31 | FRENCH PAPER - III                      |
|                      | 15LHIN31 | HINDI PAPER - III                       |
|                      | 15LTAM31 | TAMIL PAPER - III                       |
|                      | 15PBBC31 | PRACTICAL - BIOCHEMICAL PREPARATIONS    |
|                      | 15PBBC32 | PRACTICAL - SEPARATION TECHNIQUES       |
|                      | 15SBBC31 | MEDICAL LAB DIAGNOSTICS                 |
|                      | 15UGE513 | INTERNET BASICS                         |
|                      | 15CBBC41 | HUMAN PHYSIOLOGY                        |
|                      | 15DBBC41 | CLINICAL NUTRITION                      |
|                      | 15EVS041 | ENVIRONMENTAL STUDIES                   |
|                      | 15LENG41 | ENGLISH PAPER - IV                      |
|                      | 15LFRE41 | FRENCH PAPER - IV                       |
|                      | 15LHIN41 | HINDI PAPER - IV                        |
|                      | 15LTAM41 | TAMIL PAPER - IV                        |
|                      | 15PBBC41 | PRACTICAL - HEMATOLOGY                  |
|                      | 15PBBC42 | PRACTICAL - NUTRITIONAL BIOCHEMISTRY    |
|                      | 15UGE504 | PHOTOSHOP                               |
|                      | 15CBBC51 | ENZYMES AND INTERMEDIARY METABOLISM - I |

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|-----------------------|----------|---|
| B.Sc. - Biochemistry  | 15CBBC52 | CLINICAL BIOCHEMISTRY - I                               |
|                       | 15DBBC51 | ESSENTIALS OF ENDOCRINOLOGY                             |
|                       | 15DBBC52 | BASICS OF MOLECULAR BIOLOGY                             |
|                       | 15PBBC51 | PRACTICAL - ENZYMOLOGY                                  |
|                       | 15CBBC61 | ENZYMES AND INTERMEDIARY METABOLISM - II                |
|                       | 15CBBC62 | CLINICAL BIOCHEMISTRY - II                              |
|                       | 15DBBC61 | IMMUNOBIOLOGY   |
|                       | 15DBBC62 | BIOTECHNOLOGY   |
|                       | 15IBBC61 | INDUSTRIAL VISIT  |
|                       | 15PBBC61 | PRACTICAL - CLINICAL BIOCHEMISTRY                       |
|                       | 15RBBC61 | GROUP PROJECT   |
| B.Sc. - BIO COMPUTING | 15BBI001 | FUNDAMENTALS OF COMPUTERS AND STATISTICAL ANALYSIS      |
|                       | 15BBI002 | PRACTICAL - BASIC CONCEPTS IN COMPUTER                  |
|                       | 15BBI101 | FUNDAMENTALS OF MOLECULAR CELL BIOLOGY AND BIOCHEMISTRY |
|                       | 15BBI102 | PRACTICAL - ALLIED BIOCHEMISTRY                         |
|                       | 15LEN001 | ENGLISH PAPER - I                                       |
|                       | 15LFR001 | FRENCH PAPER - I  |
|                       | 15LHN001 | HINDI PAPER - I   |
|                       | 15LTA001 | TAMIL PAPER - I   |
|                       | 15BBI003 | PROGRAMMING IN C  |
|                       | 15BBI004 | PRACTICAL - PROGRAMMING IN C                            |

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|-----------------------|-----------------|---|
| B.Sc. - BIO COMPUTING | 15BBI103        | MICROBIOLOGY AND IMMUNOLOGY                         |
|                       | 15BBI104        | PRACTICAL - INTRODUCTION TO MICROBIALINFORMATICS    |
|                       | 15BPD251        | PERSONALITY DEVELOPMENT - I                         |
|                       | 15LEN002        | ENGLISH PAPER - II                                  |
|                       | 15LFR002        | FRENCH PAPER - II                                   |
|                       | 15LHN002        | HINDI PAPER - II                                    |
|                       | 15LTA002        | TAMIL PAPER - II                                    |
|                       | 15CBCM31        | PROGRAMMING WITH C++ AND DATA STRUCTURE             |
|                       | 15CBCM32        | COMPUTER NETWORKS                                   |
|                       | 15CBCM33        | FUNDAMENTALS OF PLANT BIOINFORMATICS                |
|                       | 15LENG31        | ENGLISH PAPER - III                                 |
|                       | 15LFRE31        | FRENCH PAPER - III                                  |
|                       | 15LHIN31        | HINDI PAPER - III                                   |
|                       | 15LTAM31        | TAMIL PAPER - III                                   |
|                       | 15PBCM31        | PRACTICAL - PROGRAMMING WITH C++ AND DATA STRUCTURE |
|                       | 15PBCM32        | PRACTICAL - PLANT BIOINFORMATICS TECHNIQUES         |
|                       | 15UGE515        | INTRODUCTION TO NANOSCIENCE AND NANOTECHNOLOGY      |
|                       | 15CBCM41        | PROGRAMMING WITH VISUAL BASIC AND RDBMS             |
|                       | 15CBCM42        | OPERATING SYSTEMS                                   |
| 15DBC41               | CHEMINFORMATICS |   |
| B.Sc. - BIO COMPUTING | 15EVS041        | ENVIRONMENTAL STUDIES                               |

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|-----------------------|---------------------|---|
| B.Sc. - BIO COMPUTING | 15LENG41            | ENGLISH PAPER - IV                                  |
|                       | 15LFRE41            | FRENCH PAPER - IV                                   |
|                       | 15LHIN41            | HINDI PAPER - IV                                    |
|                       | 15LTAM41            | TAMIL PAPER - IV                                    |
|                       | 15PBCM41            | PRACTICAL - PROGRAMMING WITH VISUAL BASIC AND RDBMS |
|                       | 15PBCM42            | PRACTICAL - CHEMINFORMATICS                         |
|                       | 15UGE539            | AIR POLLUTION MANAGEMENT                            |
|                       | 15CBCM51            | PROGRAMMING WITH JAVA                               |
|                       | 15CBCM52            | INTRODUCTION TO PERL, BIOPERL AND CGI               |
|                       | 15CBCM53            | INTRODUCTION TO BIOINFORMATICS ALGORITHMS           |
|                       | 15CBCM54            | GENOMICS AND PROTEOMICS                             |
|                       | 15NSS259            | NSS - V   |
|                       | 15PBCM51            | PRACTICAL - PROGRAMMING WITH JAVA                   |
|                       | 15PBCM52            | PRACTICAL - INTRODUCTION TO PERL, BIOPERL AND CGI   |
|                       | 15PBCM53            | PRACTICAL - INTRODUCTION TO BIOINFORMATICS          |
|                       | 15UGE513            | INTERNET BASICS                                     |
|                       | 15CBCM61            | PYTHON FOR BIOINFORMATICS                           |
|                       | 15CBCM62            | MOLECULAR BIOLOGY DATABASES                         |
|                       | 15CBCM63            | INTRODUCTION TO MEDICAL TRANSCRIPTION AND CODING    |
|                       | 15CBCM64            | ENZYMES AND METABOLISM                              |
| 15CBCM65              | BIODIVERSITY BASICS |   |

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|                       | 15PBCM61 | PRACTICAL - PYTHON FOR BIOINFORMATICS                    |
|                       | 15PBCM62 | PRACTICAL - SEQUENCE ANALYSIS                            |
|                       | 15RBCM61 | PROJECT WORK   |
|                       | 15UGE513 | INTERNET BASICS  |
| B.Sc. - Biotechnology | 15BBT001 | ADVANCED CELL BIOLOGY                                    |
|                       | 15BBT002 | PRACTICAL - ADVANCED CELL BIOLOGY                        |
|                       | 15BBT101 | CHEMISTRY  |
|                       | 15BBT102 | PRACTICAL - CHEMISTRY                                    |
|                       | 15LEN001 | ENGLISH PAPER - I  |
|                       | 15LFR001 | FRENCH PAPER - I   |
|                       | 15LHN001 | HINDI PAPER - I  |
|                       | 15LTA001 | TAMIL PAPER - I  |
|                       | 15BBT003 | MOLECULAR GENETICS AND DEVELOPMENTAL BIOLOGY             |
|                       | 15BBT004 | PRACTICAL - MOLECULAR GENETICS AND DEVELOPMENTAL BIOLOGY |
|                       | 15BBT103 | BIOCHEMISTRY AND BIOINSTRUMENTATION                      |
|                       | 15BBT104 | PRACTICAL - BIOCHEMISTRY                                 |
|                       | 15BPD251 | PERSONALITY DEVELOPMENT - I                              |
|                       | 15LEN002 | ENGLISH PAPER - II                                       |
|                       | 15LFR002 | FRENCH PAPER - II  |
|                       | 15LHN002 | HINDI PAPER - II   |
|                       | 15LTA002 | TAMIL PAPER - II   |



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| 15NSS255 | NSS - I  |
| 15CBBT31 | CLINICAL DIAGNOSTIC TECHNIQUES                         |
| 15CBBT32 | MICROBIOLOGY   |
| 15LENG31 | ENGLISH PAPER - III                                    |
| 15LFRE31 | FRENCH PAPER - III                                     |
| 15LHIN31 | HINDI PAPER - III                                      |
| 15LTAM31 | TAMIL PAPER - III                                      |
| 15PBBT31 | PRACTICAL - CLINICAL DIAGNOSTIC<br>TECHNIQUES          |
| 15PBBT32 | PRACTICAL - MICROBIOLOGY                               |
| 15UGE527 | FOOD CHEMISTRY AND ADULTERATION                        |
| 15CBBT41 | PLANT AND ANIMAL BIOTECHNOLOGY                         |
| 15DBBT41 | BIOPHYSICS, BIOSTATISTICS AND<br>COMPUTATIONAL BIOLOGY |
| 15EVS041 | ENVIRONMENTAL STUDIES                                  |
| 15LENG41 | ENGLISH PAPER - IV                                     |
| 15LFRE41 | FRENCH PAPER - IV                                      |
| 15LHIN41 | HINDI PAPER - IV                                       |
| 15LTAM41 | TAMIL PAPER - IV                                       |
| 15PBBT41 | PRACTICAL - PLANT AND ANIMAL TECHNOLOGY                |
| 15PBBT42 | PRACTICAL - COMPUTATIONAL BIOLOGY                      |
| 15UGE513 | INTERNET BASICS  |
| 15CBBT51 | GENETIC ENGINEERING, IPR AND BIOETHICS                 |

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|                    | 15CBBT52 | IMMUNOTECHNOLOGY                             |
|                    | 15DBBT51 | MICROBIAL AND ENVIRONMENTAL BIOTECHNOLOGY    |
|                    | 15NSS256 | NSS - II                                     |
|                    | 15PBBT51 | PRACTICAL - GENETIC ENGINEERING              |
|                    | 15PBBT52 | PRACTICAL - IMMUNOTECHNOLOGY                 |
|                    | 15UGE503 | WEB DESIGNING                                |
|                    | 15CBBT61 | BIOFERMENTATION AND DOWNSTREAM PROCESSING    |
|                    | 15CBBT62 | MEDICAL CODING AND CLINICAL RESEARCH         |
|                    | 15DBBT61 | MUSHROOM CULTIVATION AND ITS MARKETING       |
|                    | 15DBBT62 | PHARMACEUTICAL BIOTECHNOLOGY                 |
|                    | 15PBBT61 | PRACTICAL - BIOFERMENTATION                  |
|                    | 15RBBT61 | PROJECT WORK                                 |
| B.Sc. Microbiology | 15BMI001 | GENERAL MICROBIOLOGY                         |
|                    | 15BMI002 | PRACTICAL - BASIC TECHNIQUES IN MICROBIOLOGY |
|                    | 15BMI101 | BIOCHEMISTRY                                 |
|                    | 15BMI102 | PRACTICAL - METHODS IN BIOCHEMISTRY          |
|                    | 15LEN001 | ENGLISH PAPER - I                            |
|                    | 15LFR001 | FRENCH PAPER - I                             |
|                    | 15LHN001 | HINDI PAPER - I                              |
|                    | 15LTA001 | TAMIL PAPER - I                              |
|                    | 15BMI003 | MICROBIAL TAXONOMY, ANATOMY AND PHYSIOLOGY   |

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| 15BMI004 | PRACTICAL - MICROBIAL CYTOLOGY AND PHYSIOLOGY           |
| 15BMI104 | BIOINSTRUMENTATION                                      |
| 15BMI105 | PRACTICAL - BIOINSTRUMENTATION                          |
| 15BMI106 | ENVIRONMENTAL BIOTECHNOLOGY                             |
| 15BMI107 | PRACTICAL - ENVIRONMENTAL BIOTECHNOLOGY                 |
| 15BPD251 | PERSONALITY DEVELOPMENT - I                             |
| 15LEN002 | ENGLISH PAPER - II                                      |
| 15LFR002 | FRENCH PAPER - II                                       |
| 15LHN002 | HINDI PAPER - II  |
| 15LTA002 | TAMIL PAPER - II  |
| 15CBMB31 | MICROBIAL GENETICS AND MOLECULAR BIOLOGY                |
| 15CBMB32 | BIOINFORMATICS  |
| 15LENG31 | ENGLISH PAPER - III                                     |
| 15LFRE31 | FRENCH PAPER - III                                      |
| 15LHIN31 | HINDI PAPER - III                                       |
| 15LTAM31 | TAMIL PAPER - III                                       |
| 15PBMB31 | PRACTICAL - BIOINFORMATICS                              |
| 15PBMB32 | PRACTICAL - MICROBIAL GENETICS AND MOLECULAR SEPARATION |
| 15UGE506 | TOURISM MANAGEMENT                                      |
| 15CBMB41 | IMMUNOLOGY  |
| 15DBMB41 | BIOFERTILIZERS  |

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| 15EVS041 | ENVIRONMENTAL STUDIES  |
| 15LENG41 | ENGLISH PAPER - IV   |
| 15LFRE41 | FRENCH PAPER - IV  |
| 15LHIN41 | HINDI PAPER - IV   |
| 15LTAM41 | TAMIL PAPER - IV   |
| 15PBMB41 | PRACTICAL - IMMUNOLOGY   |
| 15PBMB42 | PRACTICAL - BIOFERTILIZERS                                       |
| 15UGE508 | FILM APPRECIATION  |
| 15CBMB51 | MICROBES IN SOIL AND AGRICULTURE                                 |
| 15CBMB52 | PHARMACEUTICAL MICROBIOLOGY                                      |
| 15CBMB53 | AQUATIC MICROBIOLOGY, WASTEWATER TECHNOLOGY AND AEROMICROBIOLOGY |
| 15CBMB54 | FOOD MICROBIOLOGY  |
| 15NSS255 | NSS - I  |
| 15PBMB51 | PRACTICAL - FOOD AND AQUATIC MICROBIOLOGY                        |
| 15PBMB52 | PRACTICAL - SOIL AND PHARMACEUTICAL MICROBIOLOGY                 |
| 15RBMB51 | PROJECT  |
| 15UGE513 | INTERNET BASICS  |
| 15CBMB61 | VIROLOGY   |
| 15CBMB62 | BACTERIOLOGY   |
| 15CBMB63 | PARASITOLOGY   |
| 15CBMB64 | MYCOLOGY   |

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|------------------------|----------|---|
|                        | 15CBMB65 | RDNA TECHNOLOGY AND NANOTECHNOLOGY                    |
|                        | 15PBMB61 | PRACTICAL - VIROLOGY AND BACTERIOLOGY                 |
|                        | 15PBMB62 | PRACTICAL - MYCOLOGY AND PARASITOLOGY                 |
|                        | 15UGE531 | APPRECIATION OF KARNATIC MUSIC                        |
| M.Sc. - Bioinformatics | 15CMBI11 | INTRODUCTION TO BIOINFORMATICS                        |
|                        | 15CMBI12 | COMPUTER PROGRAMMING IN C AND C++                     |
|                        | 15DMBI11 | GENOMICS AND PROTEOMICS                               |
|                        | 15DMBI12 | MOLECULAR CELL BIOLOGY AND BIOCHEMISTRY               |
|                        | 15PMBI11 | PRACTICAL - BIOLOGICAL DATABANK AND SEQUENCE ANALYSIS |
|                        | 15PMBI12 | PRACTICAL - BIOPROGRAMMING IN C AND C++               |
|                        | 15PGE519 | INTERNET BASICS                                       |
|                        | 15CMBI21 | PROGRAMMING IN VB AND RDBMS                           |
|                        | 15CMBI22 | PROGRAMMING IN PERL AND BIOPERL                       |
|                        | 15DMBI21 | CHEMINFORMATICS                                       |
|                        | 15DMBI22 | BIOPHYSICAL CHEMISTRY                                 |
|                        | 15PMBI21 | PRACTICAL - PROGRAMMING IN VB AND RDBMS               |
|                        | 15PMBI22 | PRACTICAL - PROGRAMMING IN PERL AND BIOPERL           |
|                        | 15PMBI23 | MINI PROJECT  |
|                        | 15PGE524 | FOOD CHEMISTRY AND ADULTERATION                       |
|                        | 15CMBI31 | MOLECULAR MODELING AND DRUG DESIGNING                 |

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|----------------------|----------|---|
|                      | 15CMBI32 | ADVANCED PROGRAMMING IN JAVA                                      |
|                      | 15DMBI31 | STRUCTURAL BIOINFORMATICS   |
|                      | 15DMBI32 | GENETIC ENGINEERING AND NANOTECHNOLOGY                            |
|                      | 15PMBI31 | PRACTICAL - COMPUTER AIDED DRUG DESIGNING                         |
|                      | 15PMBI32 | PRACTICAL - PROGRAMMING IN JAVA AND BIOJAVA                       |
|                      | 15PGE531 | FILM APPRECIATION   |
|                      | 15CMBI41 | OPERATING SYSTEMS   |
|                      | 15CMBI42 | CLINICAL RESEARCH   |
|                      | 15RMBI41 | MAIN PROJECT  |
| M.Sc. – Biochemistry | 15MBC001 | CHEMISTRY OF BIOMOLECULES   |
|                      | 15MBC002 | ADVANCED INSTRUMENTAL TECHNIQUES                                  |
|                      | 15MBC003 | PRACTICAL - I : BIOCHEMISTRY AND INSTRUMENTATION                  |
|                      | 15MBC101 | HUMAN PHYSIOLOGY AND BASICS OF ANATOMY                            |
|                      | 15MBC102 | FUNDAMENTALS OF COMPUTERS, BIOSTATISTICS AND RESEARCH METHODOLOGY |
|                      | 15SSK151 | SOFT SKILL - I  |
|                      | 15MBC004 | ENZYMOLGY   |
|                      | 15MBC005 | INTERMEDIARY METABOLISM   |
|                      | 15MBC006 | PRACTICAL - II BIOTECHNOLOGY                                      |
|                      | 15MBC007 | PRACTICAL - III MICROBIOLOGY                                      |
|                      | 15MBC103 | MICROBIOLOGY AND IMMUNOLOGY                                       |
|                      | 15MBC104 | BIOTECHNOLOGY, IPR AND MARKETING                                  |

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|   | 15SSK152 | SOFT SKILL - II  |
|   | 15PGE519 | INTERNET BASICS  |
|   | 15CMBC31 | GENETICS AND MOLECULAR BIOLOGY                               |
|   | 15CMBC32 | CLINICAL BIOCHEMISTRY  |
|   | 15CMBC33 | MODERN LIFESTYLE ASSOCIATED DISEASES                         |
|   | 15CMBC34 | ENDOCRINOLOGY  |
|   | 15IMBC31 | INTERNSHIP   |
|   | 15PMBC31 | PRACTICAL - IV CLINICAL BIOCHEMISTRY                         |
|   | 15PGE529 | STRUCTURAL BIOINFORMATICS                                    |
|   | 15CMBC41 | TOXICOLOGY AND FORENSIC BIOCHEMISTRY                         |
|   | 15RMBC41 | PROJECT  |
| M.Sc. - Applied Medical<br>Biotechnology and Clinical<br>Research | 15MMB001 | APPLIED MEDICAL BIOCHEMISTRY AND CELL<br>BIOLOGY             |
|   | 15MMB002 | CLINICAL MICROBIOLOGY AND MEDICAL<br>RECORD SCIENCE          |
|   | 15MMB003 | PRACTICAL - I : BIOCHEMISTRY                                 |
|   | 15MMB004 | PRACTICAL - II : CELL BIOLOGY                                |
|   | 15MMB101 | HUMAN PHYSIOLOGY   |
|   | 15MMB102 | HUMAN GENETICS AND DEVELOPMENTAL<br>BIOLOGY                  |
|   | 15SSK151 | SOFT SKILL - I   |
|   | 15MMB005 | STATISTICS FOR CLINICAL RESEARCH AND<br>RESEARCH METHODOLOGY |
|   | 15MMB006 | GENETIC ENGINEERING AND COMPUTATIONAL<br>BIOLOGY             |

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|                       | 15MMB007 | PRACTICAL - III GENETIC ENGINEERING                                 |
|                       | 15MMB008 | PRACTICAL - IV CLINICAL MICROBIOLOGY                                |
|                       | 15MMB009 | INTERNSHIP  |
|                       | 15MMB104 | NANO AND PHARMACEUTICAL BIOTECHNOLOGY                               |
|                       | 15MMB105 | TISSUE ENGINEERING AND STEM CELL BIOLOGY                            |
|                       | 15UGE504 | HERBAL DRUG TECHNOLOGY  |
|                       | 15CMAM31 | ADVANCED CLINICAL AND MOLECULAR DIAGNOSTIC TECHNIQUES               |
|                       | 15CMAM32 | MEDICAL IMMUNOLOGY AND CLINICAL RESEARCH                            |
|                       | 15CMAM33 | MEDICAL CODING AND PHARMACOVIGILANCE AND SAFETY MONITORING          |
|                       | 15CMAM34 | CLINICAL OPERATIONS AND CLINICAL DATA MANAGEMENT                    |
|                       | 15PMAM31 | PRACTICAL - V ADVANCED CLINICAL AND MOLECULAR DIAGNOSTIC TECHNIQUES |
|                       | 15PMAM32 | PRACTICAL - VI MEDICAL IMMUNOLOGY                                   |
|                       | 15PGE531 | FILM APPRECIATION   |
|                       | 15RMAM41 | PROJECT / DISSERTATION AND VIVA-VOCE                                |
| M.Sc. - Biotechnology | 15MBT001 | BIOCHEMISTRY AND ENZYMOLOGY   |
|                       | 15MBT002 | CELL AND DEVELOPMENTAL BIOLOGY                                      |
|                       | 15MBT003 | PRACTICAL - I : BIOCHEMISTRY AND ENZYMOLOGY                         |
|                       | 15MBT004 | PRACTICAL - II : CELL AND DEVELOPMENTAL BIOLOGY                     |
|                       | 15MBT101 | COMPUTATIONAL BIOLOGY, BIOPHYSICS AND BIOSTATISTICS                 |



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|                        | 15MBT102 | BIOINSTRUMENTATION   |
|                        | 15SSK151 | SOFT SKILL - I   |
|                        | 15MBT005 | MICROBIOLOGY AND IMMUNOLOGY                                    |
|                        | 15MBT006 | MOLECULAR GENETICS   |
|                        | 15MBT007 | PRACTICAL - III MICROBIOLOGY AND IMMUNOLOGY                    |
|                        | 15MBT008 | PRACTICAL - IV MOLECULAR GENETICS                              |
|                        | 15MBT009 | INTERNSHIP   |
|                        | 15MBT103 | TISSUE ENGINEERING AND STEM CELL BIOLOGY                       |
|                        | 15MBT104 | ENVIRONMENTAL AND NANO-BIOTECHNOLOGY                           |
|                        | 15MBT105 | MARINE AND PHARMACEUTICAL BIOTECHNOLOGY                        |
|                        | 15PGE504 | HERBAL DRUG TECHNOLOGY   |
|                        | 15CMBT31 | PLANT AND ANIMAL BIOTECHNOLOGY                                 |
|                        | 15CMBT32 | GENETIC ENGINEERING AND FERMENTATION TECHNOLOGY                |
|                        | 15CMBT33 | MEDICAL AND HERBAL BIOTECHNOLOGY                               |
|                        | 15CMBT34 | PROJECT MANAGEMENT AND BIOTECH PRODUCTS ENTREPRENEURSHIP       |
|                        | 15PMBT31 | PRACTICAL - V PLANT AND ANIMAL BIOTECHNOLOGY                   |
|                        | 15PMBT32 | PRACTICAL - VI GENETIC ENGINEERING AND FERMENTATION TECHNOLOGY |
|                        | 15PGE531 | FILM APPRECIATION  |
|                        | 15RMBT41 | PROJECT  |
| M.Sc. - Immunology and | 15MIM001 | MICROBIOLOGY   |

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|------------------------|---|--|
| Microbiology           | 15MIM002  | IMMUNOLOGY                                 |
|                        | 15MIM003  | PRACTICAL - I : MICROBIOLOGY               |
|                        | 15MIM004  | PRACTICAL - II : IMMUNOLOGY                |
|                        | 15MIM101  | MICROBIAL BIOCHEMISTRY                     |
|                        | 15MIM102  | MEDICAL MICROBIOLOGY                       |
|                        | 15MIM104  | INDUSTRIAL AND PHARMACEUTICAL MICROBIOLOGY |
|                        | 15SSK151  | SOFT SKILL - I                             |
|                        | 15MIM005  | MICROBIAL GENETICS AND MOLECULAR BIOLOGY   |
|                        | 15MIM006  | MOLECULAR IMMUNOLOGY AND IMMUNOGENETICS    |
|                        | 15MIM007  | PRACTICAL - III MOLECULAR BIOLOGY          |
|                        | 15MIM008  | PRACTICAL - IV IMMUNOTECHNOLOGY            |
|                        | 15MIM103  | IMMUNOTECHNOLOGY                           |
|                        | 15MIM105  | CLONING STRATEGIES AND NANOMICROBIOLOGY    |
|                        | 15MIM111  | INDUSTRIAL AND PHARMACEUTICAL MICROBIOLOGY |
|                        | 15PGE519  | INTERNET BASICS                            |
|                        | 15CMIM31  | CLINICAL IMMUNOLOGY AND VACCINOLOGY        |
|                        | 15CMIM32  | APPLIED MICROBIOLOGY                       |
|                        | 15CMIM33  | CLONING STRATEGIES AND NANOMICROBIOLOGY    |
|                        | 15CMIM34  | CELL CULTURE AND FERMENTATION TECHNOLOGY   |
|                        | 15DMIM31  | BIOFERTILIZERS                             |
|                        | 15PMIM31  | PRACTICAL - V VACCINES TECHNOLOGY          |
|                        | 15PMIM32  | PRACTICAL - VI APPLIED MICROBIOLOGY        |
| 15PGE510               | INTRODUCTION TO NANOSCIENCE AND NANO TECHNOLOGY |  |
| 15RMIM41               | PROJECT   |  |
| M.Phil. - Biochemistry | 16CRBCA1  | RESEARCH METHODOLOGY                       |

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|--------------------------|----------|---|
|                          | 16CRBCB1 | BIOCHEMISTRY                                |
|                          | 16ERBCC1 | GUIDE PAPER                                 |
|                          | 16RRBCA2 | DISSERTATION                                |
| M.Phil. - Bioinformatics | 16CRBIA1 | RESEARCH METHODOLOGY                        |
|                          | 16CRBIB1 | ADVANCED TOPICS IN BIOINFORMATICS           |
|                          | 16ERBIC1 | SPECIALIZATION PAPER :                      |
|                          | 16RRBIA2 | DISSERTATION INCLUDING VIVA VOCE            |
| M.Phil. - Microbiology   | 16CRMIA1 | RESEARCH METHODOLOGY                        |
|                          | 16CRMIB1 | ADVANCED MICROBIOLOGY                       |
|                          | 16ERMIC1 | SPECIALIZATION SUBJECT                      |
|                          | 16RRMIA2 | DISSERTATION INCLUDING VIVA VOCE            |
|                          | 16CREGA1 | RESEARCH METHODOLOGY AND LITERARY CRITICISM |