

| Category Credit Detail |                              |         |                |
|------------------------|------------------------------|---------|----------------|
| Sl.No.                 | Description                  | Credits | Maximum Credit |
| 1                      | FC - Foundation Core         | 56      | 56             |
| 2                      | DC - Discipline Core         | 71      | 71             |
| 3                      | DE - Discipline Elective     | 27      | 27             |
| 4                      | PI - Projects and Internship | 17      | 17             |
| 5                      | OE - Open Elective           | 12      | 12             |
| 6                      | AE - Ability Enhancement     | 9       | 9              |
| 7                      | SE - Skill Enhancement       | 8       | 8              |
| Total Credits          |                              | 200     |                |

| Foundation Core |             |                                                               |             |         |   |   |   |   |         |
|-----------------|-------------|---------------------------------------------------------------|-------------|---------|---|---|---|---|---------|
| sl.no           | Course Code | Course Title                                                  | Course Type | Version | L | T | P | J | Credits |
| 1               | TBIT101L    | Biological Science                                            | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 2               | TBIT101P    | Biological Science Lab                                        | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 3               | TBIT102L    | Bioethics and Biosafety                                       | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 4               | TBIT103L    | Cell Biology                                                  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 5               | TBIT104L    | Molecular Biology                                             | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 6               | TBIT105P    | Cell and Molecular Biology Lab                                | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 7               | TBIT106L    | Biochemistry                                                  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 8               | TBIT106P    | Biochemistry Lab                                              | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 9               | TBIT107L    | Industrial Unit Operations                                    | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 10              | TBIT107P    | Industrial Unit Operations Lab                                | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 11              | TBIT208L    | Industry Standards and Guidelines                             | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 12              | TCHY101L    | Chemistry                                                     | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 13              | TCHY101P    | Chemistry Lab                                                 | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 14              | TCSE101L    | Computer Programming : C                                      | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 15              | TCSE101P    | Computer Programming : C Lab                                  | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 16              | TCSE207L    | Computer Programming: Python                                  | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 17              | TCSE207P    | Computer Programming: Python Lab                              | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 18              | TFLE200L    | M.Sc. (5 Year Integrated Programme) - Foreign Language - 2021 | Basket      | 1.0     | 0 | 0 | 0 | 0 | 2.0     |
| 19              | TMAT101L    | Mathematics                                                   | Theory Only | 1.0     | 3 | 1 | 0 | 0 | 4.0     |
| 20              | TMAT201L    | Probability and Statistics                                    | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 21              | TMAT201P    | Probability and Statistics Lab                                | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 22              | TPHY101L    | Physics                                                       | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 23              | TPHY101P    | Physics Lab                                                   | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 24              | TRES102L    | Research Methodology                                          | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 25              | TSSC201L    | Critical Thinking                                             | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 26              | TSSC202L    | Intra and Interpersonal Skills                                | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |

| Discipline Core |             |                                       |             |         |   |   |   |   |         |
|-----------------|-------------|---------------------------------------|-------------|---------|---|---|---|---|---------|
| sl.no           | Course Code | Course Title                          | Course Type | Version | L | T | P | J | Credits |
| 1               | TBIT201L    | Genetics                              | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 2               | TBIT202L    | Microbiology                          | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 3               | TBIT202P    | Microbiology Lab                      | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 4               | TBIT203L    | Genetic Engineering                   | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 5               | TBIT203P    | Genetic Engineering Lab               | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 6               | TBIT204L    | Food Nutrition and Health             | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 7               | TBIT205L    | Human Anatomy and Physiology          | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 8               | TBIT206L    | Fundamentals of Chemical Engineering  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 9               | TBIT207L    | Immunology                            | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 10              | TBIT207P    | Immunology Lab                        | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 11              | TBIT301L    | Analytical Techniques                 | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 12              | TBIT301P    | Analytical Techniques Lab             | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 13              | TBIT302L    | Bioprocess Engineering                | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 14              | TBIT302P    | Bioprocess Engineering Lab            | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 15              | TBIT303L    | Fundamentals of Biostatistics         | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 16              | TBIT304L    | Bioinformatics                        | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 17              | TBIT304P    | Bioinformatics Lab                    | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 18              | TBIT305L    | Downstream Processing                 | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 19              | TBIT305P    | Downstream Processing Lab             | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 20              | TBIT401L    | Systems Biology                       | Theory Only | 1.0     | 3 | 1 | 0 | 0 | 4.0     |
| 21              | TBIT402L    | Plant Biotechnology                   | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 22              | TBIT402P    | Plant Biotechnology Lab               | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 23              | TBIT403L    | Biodiversity and Conservation Biology | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 24              | TBIT405L    | Animal Biotechnology                  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 25              | TBIT405P    | Animal Biotechnology Lab              | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |
| 26              | TBIT406L    | Biological Databases                  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 27              | TBIT406P    | Biological Databases Lab              | Lab Only    | 1.0     | 0 | 0 | 4 | 0 | 2.0     |

| Discipline Elective |             |                             |             |         |   |   |   |   |         |
|---------------------|-------------|-----------------------------|-------------|---------|---|---|---|---|---------|
| sl.no               | Course Code | Course Title                | Course Type | Version | L | T | P | J | Credits |
| 1                   | TBIT209L    | Developmental Biology       | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 2                   | TBIT210L    | Cancer Biology              | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 3                   | TBIT211L    | Genomics                    | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 4                   | TBIT212L    | Proteomics                  | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 5                   | TBIT213L    | Food Biotechnology          | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 6                   | TBIT214L    | Forensic Science            | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 7                   | TBIT306L    | Industrial Biotechnology    | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 8                   | TBIT307L    | Environmental Biotechnology | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |

| Discipline Elective |          |                                            |             |     |   |   |   |   |     |
|---------------------|----------|--------------------------------------------|-------------|-----|---|---|---|---|-----|
| 9                   | TBIT308L | Pharmaceutical Biotechnology               | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 10                  | TBIT309L | Medical Biotechnology                      | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 11                  | TBIT310L | Aquatic Biotechnology                      | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 12                  | TBIT311L | Nanobiotechnology                          | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 13                  | TBIT390J | Study Project                              | Project     | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 14                  | TBIT391J | Technical Answers to Real Problems Project | Project     | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 15                  | TBIT392J | Design Project                             | Project     | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 16                  | TBIT393J | Laboratory Project                         | Project     | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 17                  | TBIT397J | Special Project                            | Project     | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 18                  | TBIT407L | Molecular Endocrinology                    | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 19                  | TBIT408L | Gene Therapy                               | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 20                  | TBIT409L | Vaccinology                                | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 21                  | TBIT410L | Molecular Modelling and Drug Design        | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 22                  | TBIT411L | Stem Cell Technology                       | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 23                  | TBIT412L | Neurobiology                               | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |
| 24                  | TBIT413L | Epidemiology and Public Health             | Theory Only | 1.0 | 3 | 0 | 0 | 0 | 3.0 |

| Projects and Internship |             |                                  |             |                 |   |   |   |   |         |
|-------------------------|-------------|----------------------------------|-------------|-----------------|---|---|---|---|---------|
| sl.no                   | Course Code | Course Title                     | Course Type | Ver<br>sio<br>n | L | T | P | J | Credits |
| 1                       | TBIT399J    | Summer Industrial Internship     | Project     | 1.0             | 0 | 0 | 0 | 0 | 2.0     |
| 2                       | TBIT497J    | Project                          | Project     | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 3                       | TBIT498J    | Research Project I               | Project     | 1.0             | 0 | 0 | 0 | 0 | 4.0     |
| 4                       | TBIT499J    | Research Project II / Internship | Project     | 1.0             | 0 | 0 | 0 | 0 | 8.0     |

| Open Elective |             |                                                                  |               |                 |   |   |   |   |         |
|---------------|-------------|------------------------------------------------------------------|---------------|-----------------|---|---|---|---|---------|
| sl.no         | Course Code | Course Title                                                     | Course Type   | Ver<br>sio<br>n | L | T | P | J | Credits |
| 1             | CFOC102M    | Introduction to Cognitive Psychology                             | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 2             | CFOC112M    | Sociology of Science                                             | Online Course | 1.0             | 0 | 0 | 0 | 0 | 1.0     |
| 3             | CFOC121M    | Leadership                                                       | Online Course | 1.0             | 0 | 0 | 0 | 0 | 1.0     |
| 4             | CFOC175M    | Nanotechnology in Agriculture                                    | Online Course | 1.0             | 0 | 0 | 0 | 0 | 2.0     |
| 5             | CFOC181M    | WildLife Conservation                                            | Online Course | 1.0             | 0 | 0 | 0 | 0 | 2.0     |
| 6             | CFOC182M    | Organic Chemistry in Biology and Drug Development                | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 7             | CFOC191M    | Forests and their Management                                     | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 8             | CFOC194M    | Human Molecular Genetics                                         | Online Course | 1.0             | 0 | 0 | 0 | 0 | 1.0     |
| 9             | CFOC197M    | Bio-Informatics: Algorithms and Applications                     | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 10            | CFOC202M    | Cell Culture Technologies                                        | Online Course | 1.0             | 0 | 0 | 0 | 0 | 2.0     |
| 11            | CFOC206M    | Fire Protection, Services and Maintenance Management of Building | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |
| 12            | CFOC292M    | Programming in Java                                              | Online Course | 1.0             | 0 | 0 | 0 | 0 | 3.0     |

| Open Elective |          |                                              |               |     |   |   |   |   |     |
|---------------|----------|----------------------------------------------|---------------|-----|---|---|---|---|-----|
| 13            | CFOC328M | Medicinal Chemistry                          | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 14            | CFOC383M | Roadmap for Patent Creation                  | Online Course | 1.0 | 0 | 0 | 0 | 0 | 2.0 |
| 15            | CFOC404M | Patent Law for Engineers and Scientists      | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 16            | CFOC409M | Literature, Culture and Media                | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 17            | CFOC486M | Managerial Skills for Interpersonal Dynamics | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 18            | CFOC575M | Wildlife Ecology                             | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 19            | CFOC631M | Conservation Geography                       | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 20            | CFOC642M | Conservation Economics                       | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 21            | CFOC650M | Human Physiology                             | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 22            | CFOC677M | Food Science and Technology                  | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 23            | CFOC678M | Fundamentals of Ecology                      | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 24            | CFOC682M | Classics in Neuroscience                     | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |
| 25            | CFOC756M | Genome Editing and Engineering               | Online Course | 1.0 | 0 | 0 | 0 | 0 | 3.0 |

| Ability Enhancement |             |                                     |             |         |   |   |   |   |         |
|---------------------|-------------|-------------------------------------|-------------|---------|---|---|---|---|---------|
| sl.no               | Course Code | Course Title                        | Course Type | Version | L | T | P | J | Credits |
| 1                   | TCHY140L    | Environmental Studies               | Theory Only | 1.0     | 3 | 0 | 0 | 0 | 3.0     |
| 2                   | TENG101L    | Effective English Communication     | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 3                   | TENG102L    | Technical English Communication     | Theory Only | 1.0     | 2 | 0 | 0 | 0 | 2.0     |
| 4                   | TENG102P    | Technical English Communication Lab | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |
| 5                   | TENG103P    | Technical Report Writing            | Lab Only    | 1.0     | 0 | 0 | 2 | 0 | 1.0     |

| Skill Enhancement |             |                              |                         |         |   |   |   |   |         |
|-------------------|-------------|------------------------------|-------------------------|---------|---|---|---|---|---------|
| sl.no             | Course Code | Course Title                 | Course Type             | Version | L | T | P | J | Credits |
| 1                 | TBIT312E    | Plant Tissue Culture         | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |
| 2                 | TBIT313E    | Animal Cell Culture          | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |
| 3                 | TBIT314E    | Histopathology and Cytology  | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |
| 4                 | TBIT404E    | Gene Editing                 | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |
| 5                 | TBIT414E    | Cytogenetics and Karyotyping | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |
| 6                 | TBIT415E    | Animal Breeding and Handling | Embedded Theory and Lab | 1.0     | 1 | 0 | 2 | 0 | 2.0     |