**B. Sc. Biochemistry**

Syllabus

 AFFILIATED COLLEGES

**Program Code:22H**

**2020 – 2021 onwards**

**BHARATHIAR UNIVERSITY**

**(A State University, Accredited with “A” Grade by NAAC, Ranked 13th among Indian Universities by MHRD-NIRF,**

**World Ranking: Times -801-1000,Shanghai -901-1000, URAP - 982)**

**Coimbatore - 641 046, Tamil Nadu, India**



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| **Program Educational Objectives (PEOs)** |
| The **B.Sc Biochemistry** program describe accomplishments that graduates are expected toattain within five to seven years after graduation |
| **PEO1** | An ability to apply fundamental knowledge related to sciences in aninterdisciplinary manner for providing innovative solutions to need based problems for global impact |
| **PEO2** | An ability to critically analyze scientific data, draw objective conclusions and apply this knowledge for human welfare. Students should be able to demonstrateexpertise and ethical perspective on areas related to Biochemistry |
| **PEO3** | An ability to gain domain knowledge and know-how for successful career in academia, industry and research. Promoting lifelong learning to meet the ever evolving professional demands by developing ethical, inter personal and team skills. |



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| **Program Specific Outcomes (PSOs)** |
| After the successful completion of Bsc.Biochemistry program, the students are expected to |
| **PSO1** | Ability to understand the technical aspects of existing technologies that help inaddressing the biological and medical challenges faced by humankind. |
| **PSO2** | Ability to contribute effectively in the development of the ethical practices,societal contributions, and leading to responsible and competent professionals |
| **PSO3** | Acquiring the ability of leadership skills to manage projects in multidisciplinaryenvironments |



# Program Outcomes (POs)

On successful completion of the B.Sc program, the graduates will be able to acquire :

|  |  |
| --- | --- |
| **PO1** | Broad based knowledge in biochemistry |
| **PO2** | Transforming meaningful applications for better healthcare and economic development |
| **PO3** | Constant updation of knowledge |
| **PO4** | Empowering skills |
| **PO5** | Sole responsibility of contributing the public to lead better life through extension activities |
| **PO6** | Development of critical thinking and problem-solving skills |
| **PO7** | The provision of an inspiring, exciting and collaborative scientific environment |
| **PO8** | To inculcate the values of professionalism and dedication |
| **PO9** | Develop intelligent strategies and biochemical approaches in problem solving methods |
| **PO10** | To compete globally with confidence in all the sectors of life science |



# BHARATHIAR UNIVERSITY : : COIMBATORE 641 046

**B. Sc Biochemistry Curriculum (Affiliated Colleges)**

*(For the students admitted during the academic year 2020 – 2021 onwards)*

# REVISED SCHEME OF EXAMINATION - CBCS PATTERN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Part | Study Components | Course title | Ins. hrs/ week | Examinations | Credit |
| Dur.Hrs | CIA | Marks | Total Marks |
|  | **Semester I** |  |  |  |  |  |  |
| I | Language – I | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English – I | 6 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper I – Biomolecules | 3 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper II - Cell Biology | 3 | 3 | 25 | 75 | 100 | 4 |
|  | Core Biochemistry Practical – I | 2 | - | - | - | - | - |
|  | Allied A : Paper I – Chemistry | 6 | 3 | 20 | 55 | 75 | 3 |
|  | Allied Chemistry Practical | 2 | 3 | - | - | - | - |
| IV | Environmental Studies # | 2 | 3 | - | 50 | 50 | 2 |
|  |  |  |  |  |  |  |  |
|  | **Semester II** |  |  |  |  |  |  |
| I | Language – II | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English – II | 6 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper III - Biomedical Instrumentations | 5 | 3 | 25 | 75 | 100 | 4 |
|  | Core Biochemistry Practical – I | 3 | 3 | 40 | 60 | 100 | 4 |
|  | Allied A : Paper II – Chemistry | 6 | 3 | 20 | 55 | 75 | 3 |
|  | Allied Practical – Chemistry | 2 | 3 | 20 | 30 | 50 | 2 |
| IV | Value Education – Human Rights # | 2 | 3 | - | 50 | 50 | 2 |
|  | Swatch Bharat- Summer internship \* | - | - | - | - | - | - |
|  |  |  |  |  |  |  |  |
|  | **Semester III** |  |  |  |  |  |  |
| I | Language – III | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English – III | 6 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper IV - Enzyme and EnzymeTechnology | 3 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper V – Microbiology | 3 | 3 | 25 | 75 | 100 | 4 |
|  | Core Biochemistry Practical – II | 2 | - | - | - | - | - |
|  | Allied B: Paper I – Basic Mathematics | 6 | 3 | 20 | 55 | 75 | 3 |
| IV | Skill based Subject I – Bioinformatics andMedical coding | 2 | 3 | 20 | 55 | 75 | 3 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Tamil @ / Advanced Tamil# (OR)Non-major elective - I (Yoga for Human Excellence)# / Women’s Rights# | 2 | 3 | 50 | 50 | 2 |
|  | **Semester IV** |  |  |  |  |  |  |
| I | Language – IV | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English – IV | 6 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper VI – Intermediary Metabolism | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Core Biochemistry Practical – II | 3 | 6 | 30 | 45 | 75 | 3 |
|  | Allied B : Paper II – Computer | 4 | 3 | 20 | 55 | 75 | 3 |
|  | Practical – Computer | 2 | 3 | 20 | 30 | 50 | 2 |
| IV | Skill based Subject 2 - Basics of InformationTechnology | 3 | 3 | 20 | 55 | 75 | 3 |
|  | Tamil @ /Advanced Tamil # (OR)Non-major elective -II (General Awareness #) | 2 | 3 | 50 | 50 | 2 |
|  | **Semester V** |  |  |  |  |  |  |
| III | Core Paper VII – Human Physiology | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper VIII – Clinical Biochemistry | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper IX – Molecular Biology | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper X – Genetic Engineering andBioprocess Technology | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Biochemistry Practical – III | 4 | - | - | - | - | - |
|  | Biochemistry Practical – IV | 4 | - | - | - | - | - |
|  | Elective – I | 3 | 3 | 20 | 55 | 75 | 3 |
| IV | Skill based Subject 3 – Basics of Patent andBioethics | 3 | 3 | 20 | 55 | 75 | 3 |
|  | **Semester VI** |  |  |  |  |  |  |
| III | Core Paper XI – Plant Biochemistry and PlantTherapeutics | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Core Paper XII – Medicinal Chemistry | 4 | 3 | 25 | 75 | 100 | 4 |
|  | Biochemistry Practical – III | 4 | 6 | 30 | 45 | 75 | 3 |
|  | Biochemistry Practical – IV | 4 | 6 | 30 | 45 | 75 | 3 |
|  | Elective – II | 4 | 3 | 20 | 55 | 75 | 3 |
|  | Elective – III | 4 | 3 | 20 | 55 | 75 | 3 |
|  IV | Skill Based Subject 4 - Practical – Bioinformatics | 6 | 6 | 30 | 45 | 75 | 3 |
|  V | Extension Activities @ | - | - | 50 | - | 50 | 2 |
| IV | **Naan Mudhalvan -Employability Readiness** | **-** | **-** | **-** | **-** | **-** | **-** |
|  | Total |  |  |  |  | 3500 | 140 |



@ No University Examinations. Only Continuous Internal Assessment (CIA) # No Continuous Internal Assessment (CIA). Only University Examinations.

\* Swatch Bharat Summer internship- extra 2 credits would be given. It is mandatory