

**NATIONAL BOARD OF ACCREDITATION**

Data Capturing Points of the Program Applied for NBA Accreditation– Tier I/II UG (Engineering) Institute Programs

|                                     |                                             |
|-------------------------------------|---------------------------------------------|
| <b>Program Name :</b> Biotechnology | <b>Discipline:</b> Engineering & Technology |
| <b>Level :</b> Under Graduate       | <b>Tier:</b> 1                              |
| <b>Application No:</b> 10466        | <b>Date of Submission:</b> 10-03-2025       |

**PART A- Profile of the Institute**

|                                                                                |                                      |
|--------------------------------------------------------------------------------|--------------------------------------|
| <b>A1.Name of the Institute:</b> BASAVESHWAR ENGG. COLLEGE                     |                                      |
| Year of Establishment : 1963/1994                                              | Location of the Institute: Bagalkote |
| <b>A2. Institute Address:</b> S.NIJALINGAPPA VIDYANAGAR                        |                                      |
| City:BAGALKOT                                                                  | State:Karnataka                      |
| Pin Code:587102                                                                | Website:www.becbgk.edu               |
| Email:BECPRINCIPAL@YAHOO.COM                                                   | Phone No(with STD Code):08354-234060 |
| <b>A3. Name and Address of the Affiliating University (if any):</b>            |                                      |
| Name of the University : VISVESVARAYA TECH. UNIVERSITY BELGAUM,KARNATAKA STATE | City: Belgaum                        |
| State : Karnataka                                                              | Pin Code: 590018                     |
| <b>A4. Type of the Institution:</b> Government Aided Institute                 |                                      |
| <b>A5. Ownership Status:</b> Government Aided                                  |                                      |

**A6. Details of all Programs being Offered by the Institution:**

- No. of UG programs: **11**
- No. of PG programs: **6**

Table No. A6.1: List of all programs offered by the Institute.

| Sr.No. | Discipline               | Level of program | Name of the program                          | Year of Start | Year of Closed | Name of The Department                       |
|--------|--------------------------|------------------|----------------------------------------------|---------------|----------------|----------------------------------------------|
| 1      | Computer Application     | PG               | Master of Computer Application               | 2023          | --             | Computer Application                         |
| 2      | Engineering & Technology | UG               | Artificial Intelligence and Machine Learning | 2020          | --             | Artificial Intelligence and Machine Learning |
| 3      | Engineering & Technology | UG               | Automobile Engineering                       | 2024          | --             | Automobile Engineering                       |
| 4      | Engineering & Technology | UG               | Biotechnology                                | 2002          | --             | Biotechnology                                |
| 5      | Engineering & Technology | UG               | Civil Engineering                            | 1963          | --             | Civil Engineering                            |
| 6      | Engineering & Technology | UG               | Computer Science and Engineering             | 1983          | --             | Computer Science and Engineering             |
| 7      | Engineering & Technology | UG               | Electrical and Electronics Engineering       | 1963          | --             | Electrical and Electronics Engineering       |
| 8      | Engineering & Technology | UG               | Electronics & Communication Engineering      | 1985          | --             | Electronics and Communication Engineering    |
| 9      | Engineering & Technology | UG               | Electronics & Computer Engineering           | 2024          | --             | Electronics and Computer Engineering         |
| 10     | Engineering & Technology | PG               | Environmental Engineering                    | 2003          | --             | Civil Engineering                            |
| 11     | Engineering & Technology | PG               | Geotechnical Engineering                     | 1994          | --             | Civil Engineering                            |
| 12     | Engineering & Technology | UG               | Industrial & Production Engineering          | 1984          | --             | Industrial and Production Engineering        |
| 13     | Engineering & Technology | UG               | Information Science & Engineering            | 1999          | --             | Information Science and Engineering          |
| 14     | Engineering & Technology | PG               | Machine Design                               | 2002          | --             | Mechanical Engineering                       |
| 15     | Engineering & Technology | UG               | Mechanical Engineering                       | 1963          | --             | Mechanical Engineering                       |

|    |                          |    |                                   |      |    |                   |
|----|--------------------------|----|-----------------------------------|------|----|-------------------|
| 16 | Engineering & Technology | PG | Structural Engineering            | 1994 | -- | Civil Engineering |
| 17 | Management               | PG | Master of Business Administration | 2009 | -- | Management        |

**A7. Programs to be considered for Accreditation vide this Application:**

Table No. A7.1: List of programs to be considered for accreditation.

| Name of the Department                 | Having Allied Departments | Name of the Program                    | Program Level |
|----------------------------------------|---------------------------|----------------------------------------|---------------|
| Electrical and Electronics Engineering | No                        | Electrical and Electronics Engineering | UG            |
| Biotechnology                          | No                        | Biotechnology                          | UG            |

Table No. A7.2: Allied Department(s) to the Department of the program considered for accreditation as above.

Cluster ID. Name of the Department (in table no. A7.1) Name of allied Departments/Cluster (for table no. A7.1)

|           |
|-----------|
| No Record |
|-----------|

**PART-B: Program information****B1. Provide the Required Information for the Program Applied For:**

Table No. B1: Program details.

A. List of the Programs Offered by the Department:

| SR.NO. | PROGRAM NAME  | PROGRAM APPLIED LEVEL | YEAR OF START / YEAR OF CLOSED | SANCTIONED INTAKE | INCREASE/DECREASE INTAKE (if any) | YEAR OF INCREASE/DECREASE | CURRENT INTAKE | YEAR OF AICTE APPROVAL | AICTE/COMI AUTHORITY DETAILS |
|--------|---------------|-----------------------|--------------------------------|-------------------|-----------------------------------|---------------------------|----------------|------------------------|------------------------------|
| 1      | Biotechnology | UG                    | 2002 / --                      | 30                | No                                | NA                        | 30             | 2002                   | South-West/143664924117      |

List of the Allied Departments/Cluster and Programs:

**B2. Detail of Head of the Department for the program under consideration:**

|                           |                    |
|---------------------------|--------------------|
| A. Name of the HoD :      | Dr. Bharati S Meti |
| B. Nature of appointment: | Regular            |
| C. Qualification:         | M.Sc. and PhD      |

**B3. Program Details**

Table No.B3.1: Admission details for the program excluding those admitted through multiple entry and exit points.

| Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)                                                                | 2024-25 (CAY) | 2023-24 (CAYm1) | 2022-23 (CAYm2) | 2021-22 (CAYm3) | 2020-21 (CAYm4) | 2019-20 (CAYm5) | 2018-19 (CAYm6) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| N=Sanctioned intake of the program (as per AICTE /Competent authority)                                                                                                       | 30            | 30              | 30              | 30              | 30              | 30              | 30              |
| N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program | 29            | 18              | 17              | 20              | 19              | 12              | 19              |
| N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats                                                                      | 0             | 0               | 1               | 0               | 0               | 0               | 0               |
| N3=Separate division if any                                                                                                                                                  | 0             | 0               | 0               | 0               | 0               | 0               | 0               |
| N4=Total no. of students admitted in the 1st year via all supernumerary quotas                                                                                               | 1             | 1               | 1               | 2               | 1               | 2               | 1               |

|                                                                                                                                         |    |    |    |    |    |    |    |
|-----------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|
| Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points. | 30 | 19 | 19 | 22 | 20 | 14 | 20 |
|-----------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|

CAY= Current Academic Year. CAYm1= Current Academic Year Minus 1 CAYm2= Current Academic Year Minus 2. LYG= Last Year Graduate. LYGm1= Last Year Graduate Minus 1. LYGm2= Last Year Graduate Minus 2.

#### B4. Enrolment Ratio in the First Year

Table No. B4.1: Student enrolment ratio in the 1st year.

| Year of entry   | N (From Table 4.1) | N1 (From Table 4.1) | N4 (From Table 4.1) | Enrollment Ratio [(N1/N)*100] |
|-----------------|--------------------|---------------------|---------------------|-------------------------------|
| 2024-25 (CAY)   | 30                 | 29                  | 1                   | 100.00                        |
| 2023-24 (CAYm1) | 30                 | 18                  | 1                   | 63.33                         |
| 2022-23 (CAYm2) | 30                 | 17                  | 1                   | 60.00                         |

Average [ (ER1 + ER2 + ER3) / 3 ] = 74.44≡ 14.00

#### B5. Success Rate of the Students in the Stipulated Period of the Program

Table No.B5.1: The success rate in the stipulated period of a program.

| Item                                                                                                                                                                                                                                                                                                          | (2020-21)<br>LYG | (2019-20)<br>LYGm1 | (2018-19)<br>LYGm2 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|--------------------|
| A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any). | 30.00            | 30.00              | 30.00              |
| B=No. of students who graduated from the program in the stipulated course duration                                                                                                                                                                                                                            | 17.00            | 11.00              | 18.00              |
| Success Rate (SR)= (B/A) * 100                                                                                                                                                                                                                                                                                | 56.67            | 36.67              | 60.00              |

Average SR of three batches ((SR\_1+ SR\_2+ SR\_3)/3): 51.11

#### B6. Academic Performance of the First-Year Students of the Program

Table No.B6.1: Academic Performance of the First-Year Students of the Program.

| Academic Performance                                          | CAYm1( 2023-24 ) | CAYm2( 2022-23 ) | CAYm3 ( 2021-22 ) |
|---------------------------------------------------------------|------------------|------------------|-------------------|
| Mean of CGPA or mean percentage of all successful students(X) | 6.43             | 5.80             | 6.23              |
| Y=Total no. of successful students                            | 16.00            | 14.00            | 22.00             |
| Z=Total no. of students appeared in the examination           | 18.00            | 17.00            | 22.00             |
| API [X*(Y/Z)]                                                 | 5.72             | 4.78             | 6.23              |

Average API[ (AP1+AP2+AP3)/3 ] : 5.58

#### B7: Academic Performance of the Second Year Students of the Program

Table No.B7.1: Academic Performance of the Second Year Students of the Program.

| Academic Performance                                                                                                                                                   | CAYm1 ( 2023-24 ) | CAYm2 ( 2022-23 ) | CAYm3 ( 2021-22 ) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|
| X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2nd year/10) | 7.10              | 6.55              | 6.65              |
| Y=Total no. of successful students                                                                                                                                     | 20.00             | 22.00             | 17.00             |
| Z=Total no. of students appeared in the examination                                                                                                                    | 20.00             | 22.00             | 17.00             |
| API [ X * (Y/Z) ]                                                                                                                                                      | 7.10              | 6.55              | 6.65              |

Average API [ (AP1 + AP2 + AP3)/3 ] : 6.77

#### B8. Academic Performance of the Third Year Students of the Program

Table No.B8.1: Academic Performance of the Third Year Students of the Program

| Academic Performance                                                                                                                                                   | CAYm1 (2023-24) | CAYm2 (2022-23) | CAYm3 (2021-22) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|
| X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10) | 6.78            | 6.75            | 7.39            |
| Y=Total no. of successful students                                                                                                                                     | 22.00           | 17.00           | 11.00           |
| Z=Total no. of students appeared in the examination                                                                                                                    | 22.00           | 17.00           | 11.00           |
| API [ X*(Y/Z) ]:                                                                                                                                                       | 6.78            | 6.75            | 7.39            |

Average API [ (AP1 + AP2 + AP3)/3 ] : 6.97

#### B9. Placement, Higher Studies, and Entrepreneurship

Table No.B9.1: Placement, higher studies, and entrepreneurship details.

| Item                                 | LYG (2020-21) | LYGm1(2019-20) | LYGm2(2018-19) |
|--------------------------------------|---------------|----------------|----------------|
| FS*=Total no. of final year students | 30.00         | 30.00          | 30.00          |

|                                                 |       |       |       |
|-------------------------------------------------|-------|-------|-------|
| X=No. of students placed                        | 10.00 | 9.00  | 16.00 |
| Y=No. of students admitted to higher studies    | 7.00  | 3.00  | 6.00  |
| Z= No. of students taking up entrepreneurship   | 0.00  | 0.00  | 0.00  |
| Placement Index(P) = $((X + Y + Z)/FS) * 100$ : | 56.67 | 40.00 | 73.33 |

Average Placement Index =  $(P_1 + P_2 + P_3)/3$ : 56.67 Placement Index Points:

## PART C: Faculty Details in Department and Allied Departments

(Data to be filled in for the Department and Allied Departments)

### C1. Faculty details of Department and Allied Departments

Table No.C1: Faculty details in the Department for the past 3 years including CAY

| Sr.No | Name of the Faculty       | PAN No.     | Highest degree                 | University                                      | Area of Specialization  | Date of Joining in this Institution | Experience in years in current institute | Designation at Time Joining in this Institution | Present Designation | The date on which Designated as Professor/ Associate Professor if any | Nature of Appointment (Regular Contract Ad hoc) |
|-------|---------------------------|-------------|--------------------------------|-------------------------------------------------|-------------------------|-------------------------------------|------------------------------------------|-------------------------------------------------|---------------------|-----------------------------------------------------------------------|-------------------------------------------------|
| 1     | Dr. Bharati S Meti        | XXXXXXXX50R | M.Sc. and PhD                  | Gulbarga University Gulbarga                    | Plant Biotechnology     | 18/09/2003                          | 21.5                                     | Assistant Professor                             | Professor           | 01/11/2011                                                            | Regular                                         |
| 2     | Dr.Sharada S B            | XXXXXXXX41Q | M.Sc. (Biotechnology) and PhD  | Gulbarga University Gulbarga                    | Biotechnology           | 13/05/2005                          | 19.9                                     | Assistant Professor                             | Associate Professor | 01/12/2014                                                            | Regular                                         |
| 3     | Dr.Madhumala Y            | XXXXXXXX36N | M.Sc. (Microbiology) and Ph.D. | Visvesvaraya Technological University, Belagavi | Microbiology            | 05/02/2007                          | 18.1                                     | Assistant Professor                             | Assistant Professor |                                                                       | Regular                                         |
| 4     | Dr. Preeti S Kumarmath    | XXXXXXXX22K | M.Sc. and PhD                  | Visvesvaraya Technological University, Belagavi | Biochemistry            | 19/02/2007                          | 18                                       | Assistant Professor                             | Assistant Professor |                                                                       | Regular                                         |
| 5     | Dr. Shilpa K Jigajinni    | XXXXXXXX42F | M.Sc. and PhD                  | Visvesvaraya Technological University, Belagavi | Biochemistry            | 04/10/2010                          | 14.5                                     | Assistant Professor                             | Assistant Professor |                                                                       | Regular                                         |
| 6     | Dr. Jayachandra S Y       | XXXXXXXX36G | M.Sc. (Biotechnology) and PhD  | Gulbarga University Gulbarga                    | Biotechnology           | 02/02/2022                          | 3.1                                      | Assistant Professor                             | Assistant Professor |                                                                       | Regular                                         |
| 7     | Dr. Basavaraj S Nainegali | XXXXXXXX86H | ME/M. Tech and PhD             | NITK, Surathkal                                 | Biochemical Engineering | 04/01/2023                          | 2.2                                      | Assistant Professor                             | Assistant Professor |                                                                       | Regular                                         |

Table No.C2: Faculty details of Allied Departments for the past 3 years including CAY.

### C2. Student-Faculty Ratio (SFR)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):

UG1=1st UG program

UGn=nth UG program

B= No. of Students in UG 2nd year (ST)

C= No. of Students in UG 3rd year (ST)

D= No. of Students in UG 4th year (ST)

No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):

PG1=1st PG program.

PGm=mth PG program

A= No. of Students in PG 1st year

B= No. of Students in PG 2nd year

Student Faculty Ratio (SFR) = S/F

S= No. of students of all programs in the Department including all students of allied departments/clusters.

No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)

Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.

F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

No. of UG Programs in the Department1 No. of PG Programs in the Department1

Table No.C2.1: Student-faculty ratio.

| Description | CAY(2024-25) | CAYm1 (2023-24) | CAYm2 (2022-23) |
|-------------|--------------|-----------------|-----------------|
| UG1.B       | 30           | 31              | 30              |

| Description                                                                         | CAY(2024-25)       | CAYm1 (2023-24)    | CAYm2 (2022-23)    |
|-------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|
| UG1.C                                                                               | 31                 | 30                 | 30                 |
| UG1.D                                                                               | 30                 | 30                 | 30                 |
| <b>UG1: Biotechnology</b>                                                           | <b>91</b>          | <b>91</b>          | <b>90</b>          |
| PG1.A                                                                               | 0                  | 18                 | 18                 |
| PG1.B                                                                               | 18                 | 18                 | 18                 |
| <b>PG1: Food Biotechnology</b>                                                      | <b>18</b>          | <b>36</b>          | <b>36</b>          |
| DS=Total no. of students in all UG and PG programs in the Department                | 109                | 127                | 126                |
| AS=Total no. of students of all UG and PG programs in allied departments            | 0                  | 0                  | 0                  |
| S=Total no. of students in the Department (DS) and allied departments (AS)          | <b>S1= 109</b>     | <b>S2= 127</b>     | <b>S3= 126</b>     |
| DF=Total no. of faculty members in the Department                                   | 7                  | 7                  | 6                  |
| AF= Total no. of faculty members in the allied Departments                          | 0                  | 0                  | 0                  |
| F=Total no. of faculty members in the Department (DF) and allied Departments (AF)   | <b>F1= 7</b>       | <b>F2= 7</b>       | <b>F3= 6</b>       |
| FF=The faculty members in F who have a 100% teaching load in the first-year courses | 0                  | 0                  | 0                  |
| Student Faculty Ratio (SFR)=S/(F-FF)                                                | <b>SFR1= 12.11</b> | <b>SFR2= 18.14</b> | <b>SFR3= 21.00</b> |
| Average SFR for 3 years                                                             | <b>SFR= 17.08</b>  |                    |                    |

### C3. Faculty Qualification

- Faculty qualification index (FQI) =  $2.5 \times [(10X + 4Y)/RF]$  where
- X=No. of faculty members with Ph.D. degree or equivalent as per AICTE/UGC norms.
- Y=No. of faculty members with M. Tech. or ME degree or equivalent as per AICTE/ UGC norms.
- RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section C2 of this documents: (RF=S/20).

Table No.C3.1: Faculty qualification.

| Year           | X | Y | RF   | <b>FQ = <math>2.5 \times [(10X + 4Y) / RF]</math></b> |
|----------------|---|---|------|-------------------------------------------------------|
| 2024-25(CAY)   | 7 | 0 | 5.00 | 35.00                                                 |
| 2023-24(CAYm1) | 7 | 0 | 6.00 | 29.17                                                 |
| 2022-23(CAYm2) | 4 | 2 | 6.00 | 20.00                                                 |

### C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)
- RF1= No. of Professors required =  $1/9 \times$  No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per C2 of this documents:.
- RF2= No. of Associate Professors required =  $2/9 \times$  No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents:.
- RF3= No. of Assistant Professors required =  $6/9 \times$  No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents:.
- Faculty cadre and qualification and experience should be as per AICTE/UGC norms.

Table No.C4.1: Faculty cadre proportion details.

| Year    | Professors   |               | Associate Professors |               | Assistant Professors |               |
|---------|--------------|---------------|----------------------|---------------|----------------------|---------------|
|         | Required RF1 | Available AF1 | Required RF2         | Available AF1 | Required RF3         | Available AF3 |
| 2024-25 | 1.00         | 1.00          | 1.00                 | 1.00          | 3.00                 | 5.00          |
| 2023-24 | 1.00         | 1.00          | 1.00                 | 1.00          | 4.00                 | 5.00          |
| 2022-23 | 1.00         | 1.00          | 1.00                 | 1.00          | 4.00                 | 4.00          |
| Average | RF1=1.00     | AF1=1.00      | RF2=1.00             | AF2=1.00      | RF2=3.67             | AF2=4.67      |

### C5. Visiting/Adjunct Faculty/Professor of Practice

Table No. C5.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.

(CAYm1)

(CAYm2)

(CAYm3)

### C6. Academic Research

Table No. C6.1: Faculty publication details.

| S.No. | Item                                             | 2023-24<br>(CAYm1) | 2022-23<br>(CAYm2) | 2021-22<br>(CAYm3) |
|-------|--------------------------------------------------|--------------------|--------------------|--------------------|
| 1     | No. of peer reviewed journal papers published    | 1                  | 1                  | 10                 |
| 2     | No. of peer reviewed conference papers published | 1                  | 0                  | 0                  |
| 3     | No. of books/book chapters published             | 1                  | 1                  | 1                  |

**C7. Sponsored Research Project**

Table No. C7.1: List of sponsored research projects received from external agencies.

**(CAYm1)**

| PI Name               | Co-PI names if any      | Name of the Dept., where project is sanctioned | Project Title*                                                                                        | Name of the Funding agency     | Duration of the project | Amount(Lacs) i.e. 15,25,000=15.25 |
|-----------------------|-------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------|-----------------------------------|
| Dr.Bharati S. Meti    | Nil                     | Dept. of Biotechnology                         | Bioenergy Research, Information & Demonstration Activity                                              | KSBDB-BRIDC                    | One year                | 2.85                              |
| Dr. Jayachandra S. Y. | Dr. Shilpa K. Jigajinni | Dept. of Biotechnology                         | Amino acid sequencing of lipase enzyme produced by Lysinibacillus macroides for bio-diesel production | KSCST                          | One year                | 0.07                              |
| Dr. Madhumala Y.      | Dr. B. R. Hiremath      | Dept. of Biotechnology                         | Removal of heavy metals from wastewater by bioremediation method using Microalgae                     | Indian Water Works Association | One year                | 0.10                              |
|                       |                         |                                                |                                                                                                       |                                |                         | Amount received (Rs.):3.02        |

**(CAYm2)**

| PI Name                 | Co-PI names if any    | Name of the Dept., where project is sanctioned | Project Title*                                                                                             | Name of the Funding agency | Duration of the project | Amount(Lacs) i.e. 15,25,000=15.25 |
|-------------------------|-----------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------|-----------------------------------|
| Dr. Bharati S. Meti     | Nil                   | Dept. of Biotechnology                         | Bioenergy Research, Information & Demonstration Activity                                                   | KSBDB-BRIDC                | One year                | 3.80                              |
| Dr. Shilpa K. Jigajinni | Dr. Jayachandra S. Y. | Dept. of Biotechnology                         | Development of efficient biocatalyst for biodiesel production                                              | VGST                       | One year                | 3.00                              |
| Dr. Shilpa K. Jigajinni | Nil                   | Dept. of Biotechnology                         | Statistical optimization of Immobilization process to enhance the lipase activity for biodiesel production | KSCST                      | One year                | 0.08                              |
|                         |                       |                                                |                                                                                                            |                            |                         | Amount received (Rs.):6.88        |

**(CAYm3)**

| PI Name             | Co-PI names if any        | Name of the Dept., where project is sanctioned | Project Title*                                                           | Name of the Funding agency | Duration of the project | Amount(Lacs) i.e. 15,25,000=15.25 |
|---------------------|---------------------------|------------------------------------------------|--------------------------------------------------------------------------|----------------------------|-------------------------|-----------------------------------|
| Dr. Bharati S. Meti | Nil                       | Dept. of Biotechnology                         | Bioenergy Research, Information & Demonstration                          | KSBDB-BRIDC                | One year                | 1.90                              |
| Dr. Bharati S. Meti | Prof. Shilpa K. Jigajinni | Dept. of Biotechnology                         | Cloning and expression of lipase as biocatalyst for biodiesel production | KSCST                      | One year                | 0.07                              |
| Dr. Madhumala Y.    | Nil                       | Dept. of Biotechnology                         | Biosorption of Cyanides using biofilms                                   | VTU, Belagavi              | One year                | 0.05                              |
| Dr. Sharada P.      | Nil                       | Dept. of Biotechnology                         | Formulation of herbal based cleanser for fruits and vegetable wash       | KSCST                      | One year                | 0.05                              |
|                     |                           |                                                |                                                                          |                            |                         | Amount received (Rs.):2.07        |

**Total Amount (Lacs) Received for the Past 3 Years: 11.97****Note\*:**

- Only sponsored research projects will be considered. Infrastructure-based projects will not be considered here.

**C8. Consultancy Work**

Table No. C8.1: List of consultancy projects received from external agencies.

(CAYm1)

| PI Name             | Co-PI names if any | Name of the Dept., where project is sanctioned | Project Title*                                    | Name of the Funding agency | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 |
|---------------------|--------------------|------------------------------------------------|---------------------------------------------------|----------------------------|-------------------------|--------------------------------------|
| Dr. Bharati S. Meti | Nil                | CMC, Bagalkote                                 | 3rd party inspection                              | CMC/TMC                    | 1 month                 | 0.92                                 |
| Dr. Bharati S. Meti | Nil                | KSBDB, GOK                                     | Bioenergy Research, Information and Demonstration | KSBDB                      | 1 year                  | 2.26                                 |
|                     |                    |                                                |                                                   |                            |                         | Amount received (Rs.):3.18           |

(CAYm2)

| PI Name             | Co-PI names if any | Name of the Dept., where project is sanctioned | Project Title*                                    | Name of the Funding agency | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 |
|---------------------|--------------------|------------------------------------------------|---------------------------------------------------|----------------------------|-------------------------|--------------------------------------|
| Dr. Bharati S. Meti | Nil                | KSBDB, GOK                                     | Bioenergy Research, Information and Demonstration | KSBDB                      | 1 year                  | 0.38                                 |
|                     |                    |                                                |                                                   |                            |                         | Amount received (Rs.):0.38           |

(CAYm3)

| PI Name             | Co-PI names if any | Name of the Dept., where project is sanctioned | Project Title*                                    | Name of the Funding agency | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 |
|---------------------|--------------------|------------------------------------------------|---------------------------------------------------|----------------------------|-------------------------|--------------------------------------|
| Dr. Bharati S. Meti | Nil                | KSBDB, GOK                                     | Bioenergy Research, Information and Demonstration | KSBDB                      | 1 year                  | 1.74                                 |
|                     |                    |                                                |                                                   |                            |                         | Amount received (Rs.):1.74           |

**Total amount (Lacs) received for the past 3 years: 5.30****Note\*:**

- Only consultancy projects will be considered. Infrastructure-based projects will not be considered here.

**C9. Institution Seed Money or Internal Research Grant to its Faculty for Research Work**

Table No. C9.1: List of faculty members received seed money or internal research grant from the Institution.

(CAYm1)

| Faculty name | Project title/ Support for Activity | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 | Amount Utilized(Lacs)<br>i.e. 15,25,000=15.25 | Outcomes of the project |
|--------------|-------------------------------------|-------------------------|--------------------------------------|-----------------------------------------------|-------------------------|
| Nil          | Nil                                 | Nil                     | 0.00                                 | 0.00                                          | Nil                     |
|              |                                     |                         | Amount received (Rs.): 0.00          |                                               |                         |

(CAYm2)

| Faculty name | Project title/ Support for Activity | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 | Amount Utilized(Lacs)<br>i.e. 15,25,000=15.25 | Outcomes of the project |
|--------------|-------------------------------------|-------------------------|--------------------------------------|-----------------------------------------------|-------------------------|
| Nil          |                                     |                         |                                      |                                               |                         |
|              |                                     |                         | Amount received (Rs.): 0             |                                               |                         |

(CAYm3)

| Faculty name | Project title/ Support for Activity | Duration of the project | Amount(Lacs)<br>i.e. 15,25,000=15.25 | Amount Utilized(Lacs)<br>i.e. 15,25,000=15.25 | Outcomes of the project |
|--------------|-------------------------------------|-------------------------|--------------------------------------|-----------------------------------------------|-------------------------|
| Nil          | Nil                                 | Nil                     | 0.00                                 | 0.00                                          | Nil                     |
|              |                                     |                         | Amount received (Rs.): 0.00          |                                               |                         |

**Total amount (Lacs) received for the past 3 years : 0.00**

## PART D: Laboratory Infrastructure in the Department

### (Data to be filled in for the Department)

**D1. Adequate and Well-Equipped Laboratories, and Technical Manpower**

Table No.D1.1: List of laboratories and technical manpower.

| Sr. No | Name of the Laboratory                      | Number of students per set up(Batch Size) | Name of the Important Equipment                                                           | Weekly utilization status(all the courses for which the lab is utilized) | Technical Manpower Support  |             |               |
|--------|---------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------|-------------|---------------|
|        |                                             |                                           |                                                                                           |                                                                          | Name of the Technical staff | Designation | Qualification |
| 1      | Biochemistry                                | 15                                        | Colorimeter, pH meter, Electronic weigh balance, Cyclomixer, Magnetic Stirrer, Water Bath | 3 hrs×5days/wk                                                           | Mr. G. R. Kal               | Instructor  | B. Sc.        |
| 2      | Unit Operation                              | 15                                        | Pressure drop in packed Bed , Heat transfer in Packed bed, Convective                     | 3 hrs×2days/wk                                                           | Mr. M. S. Huc               | Foreman     | B. Sc. B.Ed   |
| 3      | Heat & Mass Transfer                        | 15                                        | Pressure drop in packed bed, Soxhlet's apparatus, Cooling                                 | 3 hrs×2days/wk                                                           | Mr. M. S. Huc               | Foreman     | B. Sc. B.Ed   |
| 4      | Microbiology                                | 15                                        | Electronic weigh balance, Colony Counter, Hot air oven, Microscope,                       | 3 hrs×5days/wk                                                           | Mr. M. S. Hu                | Foreman     | B. Sc. B.Ed   |
| 5      | Analysis of dairy products lab              | 15                                        | Electronic weigh Balance, Colony Counter, Hot air Oven, Microscope,                       | 3 hrs×2days/wk                                                           | Mr. M. S. Hu                | Foreman     | B. Sc. B.Ed   |
| 6      | Biostatistics and Biomodeling               | 15                                        | Computers with accessories, LCD with Smart Board, SPSS softwares.                         | 3 hrs×2days/wk                                                           | Mr. M. S. Hu                | Foreman     | B. Sc. B.Ed   |
| 7      | Immunotechnology                            | 15                                        | Deep Refrigerator, ELISA reader.                                                          | 3 hrs×2days/wk                                                           | Mr. G. R. Kal               | Instructor  | B. Sc.        |
| 8      | Molecular Biology                           | 15                                        | Vertical slab gel-electrophoresis, Sub marine gel-electrophoresis.                        | 3 hrs×2days/wk                                                           | Mr. G. R. Kal               | Instructor  | B. Sc.        |
| 9      | Extraction methods and herbal products      | 15                                        | Electronic weigh balance, Soxhlet's apparatus, Lab blender, Distillation                  | 3 hrs×2days/wk                                                           | Mr. M. S. Huc               | Foreman     | B. Sc. B.Ed   |
| 10     | Genetic Engineering                         | 15                                        | Incubator, Vertical slab gel-electrophoresis, Sub marine gel-                             | 3 hrs×2days/wk                                                           | Mr. G. R. Kal               | Instructor  | B. Sc.        |
| 11     | Bioinformatics                              | 15                                        | Computers with accessories, LCD with smart board                                          | 3 hrs×2days/wk                                                           | Mr. M. S. Hu                | Foreman     | B. Sc. B.Ed   |
| 12     | Biokinetics & Enzyme Technology             | 15                                        | Colorimeter, pH meter, Hot air oven, Electric Balance, Cyclomixer,                        | 3 hrs×2days/wk                                                           | Mr. G. R. Kal               | Instructor  | B. Sc.        |
| 13     | Upstream Process & Bioseparation Techniques | 15                                        | UV-VIS-Spectrophotometer, Cross flow cassette, Fermentor, Thin layer                      | 3 hrs×3days/wk                                                           | Mr. M. S. Huc               | Foreman Ins | B. Sc. B.Ed   |

## D2. Safety Measures in Laboratories

Table No. D2.1: List of various safety measures in laboratories.

| Sr. No | Laboratory Name                                   | Safety Measures                                                                                                                     |
|--------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Biochemistry Laboratory                           | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 2      | Microbiology Laboratory                           | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 3      | Extraction methods and herbal products Laboratory | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 4      | Analysis of Dairy Products Laboratory             | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 5      | Immunotechnology Laboratory                       | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |

|    |                                                    |                                                                                                                                     |
|----|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 6  | Biokinetics & Enzyme Technology Lab                | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 7  | Molecular Biology & Genetic Engineering Laboratory | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 8  | Genetic Engineering & Applications laboratory      | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 9  | Upstream Process & Bioseparation Techniques Lab    | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 10 | Unit Operations Laboratory                         | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 11 | Biostatistics and Tools Laboratory                 | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 12 | Bioinformatics Laboratory                          | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |
| 13 | Food Testing Laboratory                            | Fire extinguishers, Gloves, Masks, Aprons, Display of Basic Rules of laboratory Acid Dispensers First Aid Instructions Sand Buckets |

**D3. Project Laboratory/Research Laboratory**

The department has established research laboratories with latest equipments to facilitate project works related to academics and research projects.

**Table No. 7.5.1:** List of project laboratory/research laboratory /Centre of Excellence.

| S. N. | Name of the Laboratory                                                                  |
|-------|-----------------------------------------------------------------------------------------|
| 1.    | Food Testing Laboratory under the support of KITS, GoK                                  |
| 2.    | Bioenergy Research, Information and Demonstration centre in association with KSBDB, GoK |
| 3.    | Poly house with Race way ponds with the support of BVVS management                      |

| S. N. | Name of the Laboratory                                   | Details of the equipment available in the laboratory                                                                                                                                                                                                                                                                                                                                                                 | Outcome                                                                                                                                                                                                                                                                                                     |
|-------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Food Processing and Food Testing Laboratory              | Rotary Vacuum Flash Evaporator<br>UV Visible Double beam Spectrophotometer<br>Hot Air Oven<br>High Speed Cooling Centrifuge<br>Digital Electronic Weighing Balance<br>Digital Refractometer<br>Quartz Double Distillation Unit<br>Viscometer/Rheometer<br>Autoclave<br>Bomb Calorimeter<br>Texture Analyser<br>Pilot Scale Spray Dryer Unit<br>Laminar Air Flow<br>Orbital Shaking Incubator<br>Kjeldahl's apparatus | Start ups established -02<br>Patents :02<br>Total UG projects completed- 06<br>Total PG projects completed-07<br>Miniprojects-02<br>Internships-02<br>Technical paper Publications-05<br>Products developed -05<br>Startup fund received - 05 Lakhs                                                         |
| 2.    | Bioenergy Research, Information and Demonstration centre | Oil expeller<br>Seed decorticator<br>1 ltr biodiesel production<br>50 ltrs biodiesel production<br>Biodiesel testing lab<br>Density<br>Viscosity<br>Flash/Fire point<br>Copper corrosion<br>Moisture<br>Calorific value                                                                                                                                                                                              | Start ups established -02<br>Patents awarded :02<br>Ph.D awarded-05<br>Total UG projects completed- 19<br>Total PG projects completed-04<br>Miniprojects-02<br>Internships-02<br>Publications-17<br>Workshops conducted -02<br>Internships to other college students-05<br>Startup fund received - 23 Lakhs |
| 3     | Poly house with Race way ponds                           | 05 Race way ponds with total capacity of litres<br>Harvesting unit<br>Drying unit                                                                                                                                                                                                                                                                                                                                    | Start up established: 01<br>Commercial products developed -05<br>Innovation grant worth of Rs.68 lakhs-02                                                                                                                                                                                                   |



## PART E: First Year faculty and financial Resources

(Data to be filled in for the first year course faculty and budget allocation and utilization)

### E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

| Year           | Sanctioned intake of all UG programs (S4) | No. of required faculty (RF4= S4/20) | No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1) | No. of faculty members in Engineering Science Courses (NS2) | Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4));<br>Percentage= ((NS1*0.8) + (NS2*0.2))/RF |
|----------------|-------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2022-23(CAYm2) | 780                                       | 39                                   | 18                                                                                                                  | 59                                                          | 67                                                                                                                                    |
| 2023-24(CAYm1) | 780                                       | 39                                   | 20                                                                                                                  | 67                                                          | 75                                                                                                                                    |
| 2024-25(CAY)   | 990                                       | 50                                   | 20                                                                                                                  | 71                                                          | 60                                                                                                                                    |

### E2. Budget Allocation, Utilization, and Public Accounting at Institute Level

Table No. E2.1: Budget and actual expenditure incurred at Institute level.

| Items                           | Budgeted in 2024-25 | Actual Expenses in 2024-25 till | Budgeted in 2023-24 | Actual Expenses in 2023-24 till | Budgeted in 2022-23 | Actual Expenses in 2022-23 till | Budgeted in 2021-22 | Actual Expenses in 2021-22 till |
|---------------------------------|---------------------|---------------------------------|---------------------|---------------------------------|---------------------|---------------------------------|---------------------|---------------------------------|
| Infrastructure Built-Up         | 3500000.00          | 3281141.00                      | 20000000.00         | 165788889.00                    | 15000000.00         | 12424080.00                     | 20000000.00         | 16038156.00                     |
| Library                         | 3000000.00          | 2815157.00                      | 4000000.00          | 3990082.00                      | 5000000.00          | 4998422.00                      | 1400000.00          | 1376911.00                      |
| Laboratory equipment            | 20000000.00         | 17734490.00                     | 20000000.00         | 18522412.00                     | 14500000.00         | 13192618.00                     | 1400000.00          | 1329633.00                      |
| Teaching and non-teaching staff | 340000000.00        | 322249461.00                    | 320000000.00        | 311932538.00                    | 340000000.00        | 321257109.00                    | 320000000.00        | 318759644.00                    |
| Outreach Programs               | 150000.00           | 110008.00                       | 100000.00           | 45570.00                        | 100000.00           | 93440.00                        | 100000.00           | 45275.00                        |
| R&D                             | 500000.00           | 481580.00                       | 800000.00           | 786207.00                       | 400000.00           | 300000.00                       | 1200000.00          | 1144685.00                      |
| Training, Placement and         | 6000000.00          | 5714047.00                      | 3000000.00          | 2925722.00                      | 5000000.00          | 4118771.00                      | 5000000.00          | 4445438.00                      |
| SDGs                            | 2000000.00          | 1532652.00                      | 1500000.00          | 1317716.00                      | 1500000.00          | 1470999.00                      | 1500000.00          | 1471714.00                      |
| Entrepreneurship                | 15000000.00         | 10528650.00                     | 2000000.00          | 1782532.00                      | 10000000.00         | 6097226.00                      | 0                   | 0                               |
| Others, specify                 | 50000000.00         | 48456248.00                     | 100000000.00        | 91635338.00                     | 60000000.00         | 59612042.00                     | 50000000.00         | 45453141.00                     |

|              |                     |                     |                     |                     |                     |                     |                     |                     |
|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Total</b> | <b>440150000.00</b> | <b>412903434.00</b> | <b>651400000.00</b> | <b>598727006.00</b> | <b>451500000.00</b> | <b>423564707.00</b> | <b>400600000.00</b> | <b>390064597.00</b> |
|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|

**E3. Budget Allocation, Utilization, and Public Accounting at Program Specific Level**

Table No. E3.1: Budget and actual expenditure incurred at program level.

| <b>Items</b>                          | <b>Budgeted in<br/>2024-25</b> | <b>Actual<br/>Expenses in<br/>2024-25 till</b> | <b>Budgeted in<br/>2023-24</b> | <b>Actual<br/>Expenses in<br/>2023-24 till</b> | <b>Budgeted in<br/>2022-23</b> | <b>Actual<br/>Expenses in<br/>2022-23 till</b> | <b>Budgeted in<br/>2021-22</b> | <b>Actual<br/>Expenses in<br/>2021-22 till</b> |
|---------------------------------------|--------------------------------|------------------------------------------------|--------------------------------|------------------------------------------------|--------------------------------|------------------------------------------------|--------------------------------|------------------------------------------------|
| Laboratory equipment                  | 900000                         | 755542                                         | 100000                         | 20650                                          | 200000                         | 0                                              | 100000                         | 0                                              |
| Software                              | 0                              | 0                                              | 0                              | 0                                              | 0                              | 0                                              | 0                              | 0                                              |
| SDGs                                  | 0                              | 0                                              | 0                              | 0                                              | 0                              | 0                                              | 0                              | 0                                              |
| Support for faculty development       | 200000                         | 116254                                         | 100000                         | 18219                                          | 50000                          | 3493                                           | 0                              | 0                                              |
| R & D                                 | 50000                          | 5275                                           | 100000                         | 162007                                         | 0                              | 0                                              | 200000                         | 15665                                          |
| Industrial Training, Industry expert, | 100000                         | 82344                                          | 100000                         | 0                                              | 0                              | 0                                              | 0                              | 0                                              |
| Miscellaneous Expenses*               | 50000                          | 3632                                           | 50000                          | 25031                                          | 50000                          | 4554                                           | 50000                          | 2549                                           |
| <b>Total</b>                          | <b>1300000</b>                 | <b>963047</b>                                  | <b>450000</b>                  | <b>225907</b>                                  | <b>300000</b>                  | <b>8047</b>                                    | <b>350000</b>                  | <b>18214</b>                                   |