



Taranath Shikshana Samsthe
LAXMI VENKATESH DESAI COLLEGE, RAICHUR-584103.
Re-Accredited by NAAC with B Grade

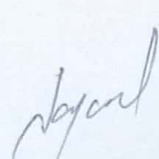



Department of Biotechnology
Add-On Course Documents

Title: Biotechnology methods and applications

Academic Year:2022-23

S.No	Particulars
1	Declaration
2	Permission letter
3	BOS Request Letter
5	Notice
6	Syllabus
7	Timetable
8	Attendance
9	Summary Report
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Internal Quality Assurance Cell (IQAC)
Laxmi Venkatesh Desai College, RAICHUR-03.


PRINCIPAL
L.V.D. College, RAICHUR.



Taranath Shikshana Samsthe



LAXMI VENKATESH DESAI COLLEGE, RAICHUR-584103.

(Affiliated to Gulbarga University, Kalaburagi. Re-Accredited by NAAC with "B" Grade)

Dr. Venkatesh B. Devaru, M.Sc., Ph.D., MBA.
PRINCIPAL

Office of the Principal
Ph: (08532)-240286, 240707
Fax: +918532 240707
e-mail: lvdrccr@gmail.com
Website: www.lvdcollege.com

Date: 14/08/2022.

TO WHOMEVER IT MAY CONCERN

This is to certify that, the college has introduced the Add_On/Certificate Course course on, "Biotechnology Methods and Applications" with the duration of 30 hours introduced in 2022-23. The said programme is apart from the existing course curriculum.

Head of the Department
Dept. of Biotechnology
L.V.D. College, RAICHUR.

Principal

PRINCIPAL
L.V.D. College, RAICHUR.

To,
The Principal
LVD College,
Raichur.

Date:04/08/2022

Respected Sir,

Sub: Request to permit to start Add on Course in the Department of Biotechnology.

As cited above I, the undersigned, **Smt Hemalatha S A**, Head of the Department of Biotechnology, would like to request you to permit to start Add On Course in Biotechnology with title "**Biotechnology methods and applications** for the academic year **2022-23**. The course may help the students to understand the basic concepts and methods in Biotechnology. The details of the course, duration, other required information is enclosed with this letter. And I am looking forward for your response.

Kindly do the needful,

Thanking you,

Yours faithfully



H.O.D.

Hemalatha S A

Dept. of Biotechnology
L.V.D. College, RAICHUR.

permitted
↓
PRINCIPAL
L.V.D. College, RAICHUR-03.



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Office of the Principal
Ph:(08532)-240286, 240707
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e-mail: lvdrcr@gmail.com
Website: lvdcollege.org

Date: 30/08/2022

ORDER

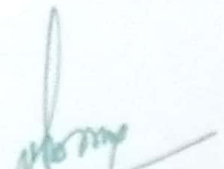
SUB: Meeting of Board of studies.

A meeting of the following BOS constituted is hereby convened on 05/09/22 at 10:30 AM in the Dept of Biotechnology, LVD College, Raichur.

Board of appointment of BOS members for Add - On Course Biotechnology methods and applications.

1.	Smt. Hemalatha S A, Head of the Department. Dept of Biotechnology. LVD College, Raichur.	Chairman
2.	Dr. Kamala Navaratna, Head of the Department. Department of Microbiology. LVD College, Raichur.	Member
3.	Smt. Sabiha Zamani, Lecturer in Biotechnology, Department of Biotechnology. GFG College, Raichur.	Member

The chairman and the members are requested to make it convenient to attend the BOS Meeting.


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L.V.D. College, RAICHUR-03.



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Dr. Venkatesh B. Devaru, M.Sc., Ph.D., MBA.
PRINCIPAL

Office of the Principal

Ph:(08532)-240286, 240707

Fax:+918532 240707

e-mail: lvdrcr@gmail.com

Website: lvdcollege.org

Date:30/08/2022

To,
Smt. Hemalatha S A,
Head of the Department.
Dept of Biotechnology.
LVD College, Raichur.

Sub: Appointed as Chairman Board of Studies for Add-on Course in
Biotechnology.

Respected Sir,

With respect to the above cited subject you are appointed as a Chairman, Board of
Studies for Add-on Course in Biotechnology, Biotechnology Methods and applications. Kindly
accept and do the needful.


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PRINCIPAL
L.V.D. College, RAICHUR-03.



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Office of the Principal

Ph:(08532)-240286, 240707

Fax:+918532 240707

e-mail: lvdrccr@gmail.com

Website: lvdcollege.org

Date:30/08/2022

To,
Dr. Kamala Navaratna,
Head of the Department.
Department of Microbiology.
LVD College,
Raichur.

Sub: Request to act as a Member, Board of Studies for Add-on Course in
Biotechnology.

Respected Madam,

With respect to the above cited subject we the staff members of Department of
Biotechnology request you to act as a Member, Board of Studies for Add-on Course in
Biotechnology, Biotechnology Methods and applications. Kindly accept and do the needful.

HOD


H.S.D.

Dept. of Biotechnology
L.V.D. College, RAICHUR.


PRINCIPAL.
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L.V.D. College, RAICHUR-03.



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LAXMI VENKATESH DESAI COLLEGE, RAICHUR-584103.

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Dr. Venkatesh B. Devaru, M.Sc., Ph.D., MBA.
PRINCIPAL

Office of the Principal

Ph:(08532)-240286, 240707

Fax:+918532 240707

e-mail: lvdrer@gmail.com

Website: lvdcollege.org

Date:30/08/2022

To,
Smt Sabiha Zamani,
Lecturer in Biotechnology,
Department of Biotechnology,
GFG College,
Raichur.

Sub: Request to act as a Member, Board of Studies for Add on Course in
Biotechnology.

Respected Madam,

With respect to the above cited subject we the staff members of Department of
Biotechnology request you to act as a Member, Board of Studies for Add-on Course in
Biotechnology, Biotechnology Methods and applications. Kindly accept and do the needful.

HOD

H. J. D.

Head of Biotechnology
L.V.D. College, RAICHUR.

PRINCIPAL.

PRINCIPAL

L.V.D. College, RAICHUR-03.

To,
The Principal,
LVD College,
Raichur.

Date:02/09/22

Respected Sir,

Sub: Acceptance to be Chairman of BOS.

With reference to the above cited subject Myself Smt Hemalatha S A, HOD Department of Biotechnology, LVD College, Raichur have received the letter of appointment as Chairman of BOS, for the Add-on Course - Biotechnology Methods and Applications to be conducted by LVD College , Raichur. I hereby accept your request as a BOS Chairman.

Thanking You

Yours faithfully,


2/9/22
H.S.B.

Dept. of Biotechnology
L.V.D. College, RAICHUR.

Date:03/09/22

To,
The Principal,
LVD College,
Raichur.


Respected Sir,

Sub: Acceptance to be Member of BOS.

With reference to the above cited subject, I **Dr. Kamala Navaratna**, Head of the Department, Dept of Microbiology, LVD College, Raichur have received the letter of request to be a Member of BOS, for the Add on Course to be conducted by LVD College , Raichur. I hereby accept your request as a BOS Member.

Thanking You

Yours truly,


3/9/2022

HEAD OF THE DEPARTMENT
of
MICROBIOLOGY

To,
The Principal,
LVD College,
Raichur.

Date:02/09/22

Respected Sir,

Sub: Acceptance to be Member of BOS.

With reference to the above cited subject Myself Smt Sabiha Zamani, Lecturer in Biotechnology, Department of Biotechnology, GFG College, Raichur have received the letter of request to be a Member of BOS, for the Add on Course - Biotechnology Methods and Applications to be conducted by LVD College ,Raichur. I hereby accept your request as a BOS Member.

Thanking You

Yours truly,



Smt. Sabiha Zamani
GFG C, Raichur.

Taranath Shikshana Samsthe
LAXMI VENKATESH DESAI COLLEGE, RAICHUR.

DEPARTMENT OF BIOTECHNOLOGY

NOTICE

All the students of B.Sc. are hereby informed that as **ADD ON COURSE** will be held in the Department of Biotechnology entitled "**Biotechnology methods and applications**", interested students can take admission and get the benefit of the course. The course may start from 01/12/2022.

For more information regarding joining to the course may contact Smt.Hemalatha S. A.,HOD, Department of Biotechnology, LVD College, Raichur.



H.O.D.

Dept. of Biotechnology
L.V.D. College, RAICHUR.



PRINCIPAL

L.V.D. College, RAICHUR-03.

TSS
Laxmi Venkatesh Desai College, Raichur
Department of Biotechnology

Title of the course: Biotechnology methods and applications .

Course outcome:

At the end of course student will be able to:

1. Student able to explain the definition of cell, differentiate the prokaryotic and eukaryotic cell, mitosis and meiosis, understand structure function of plasma membrane, understand Biomolecules and their physical and biological properties, learn metabolic pathways, cell cycle programmed cell death and cancer.
2. Discuss the structure function of carbohydrates, lipids, proteins, enzymes, enzyme kinetics; vitamins describe glycolysis and Krebs cycle.
3. Able to understand the types of immunity, antigens, antibodies and explain the basic technique of genetic engineering, concept of fermenter design, upstream and downstream processing, types of culture, production of antibiotics.
4. Learn the diagnostic techniques like PCR and their applications, Technique of plant tissue culture, technique of animal tissue culture and its applications.
5. 5. Understand DNA finger printing technique, health care products through recombinant DNA technology.

11000
H.T.D.
Dept of Biotechnology
L.V.D. College, RAICHUR.

TSS

Laxmi Venkatesh Desai College, Raichur
Department of Biotechnology

Title of the course: Biotechnology methods and applications .

Learning outcome:

At the end of course student will be able to:

1. Student able to explain the definition of cell, differentiate the prokaryotic and eukaryotic cell, mitosis and meiosis, understand structure function of plasma membrane, cell cycle programmed cell death and cancer.
2. Discuss the structure function of carbohydrates, lipids, proteins, enzymes, describe glycolysis and Krebs cycle.
3. Able to understand the types of immunity, antigens , antibodies and explain the basic technique of genetic engineering , concept of fermenter design , technique of plant tissue culture, biotechnology its applications.

Syllabus

30 hrs

Unit 1. Cell biology and Biochemistry

Discovery of cell , cell theory, ultra structure of prokaryotic and eukaryotic cell (plant and animal cell) fluid mosaic of plasma membrane, functions of plasma membrane, mitosis and meiosis, cell cycle senescence and programmed cell death, cancer. Carbohydrates classification, structure and function; Proteins: structure and function; structural organization of proteins Amino acids definition and peptide bond; Lipids: structure, function and properties ; Enzymes: Nomenclature, classification of enzymes, enzyme kinetics, factors influencing enzyme activity; Vitamins; water soluble and fat soluble dietary sources and deficiency disorders; Glycolysis, Krebs cycle, Gluconeogenesis, photosynthesis-light reaction and photophosphorylation.

10 hrs

Unit 2. Immunology, genetic engineering

Humoral and cell mediated immunity, antigens and antibodies,immunity to infections and immunodeficiency –AIDS, active and passive immunity,vaccines and vaccination, antigen and antibody reactions, recombinant DNA technique, tools and applications of recombinant DNA technology,cloning vectors PUC ,pBR 322 and bacteriophage vectors PCR technique and RT PCR, applications of genetic engineering,

8 hrs

Unit 3. Industrial biotechnology, and Microbial technology.

Design of fermenter, upstream and down stream processing, microbial culture and its growth kinetics, types – batch, fedbatch and continuous culture, industrial production of alcohol, penicillin production in microorganisms in food microbiology

6hrs

Unit 4. Biotechnology and its applications.


Molecular diagnostics – ELISA and PCR, DNA finger printing, animal cell culture, plant tissue culture , applications .Health care products of recombinant DNA technology, gene therapy and DNA finger printing and its applications. Culture media for plant tissue culture, media sterilization, explant sterilization, plant tissue culture ant its applications, animal tissue culture technique and its applications.

6hrs

References:

1. Cell Biology C B powar, Himalaya publishers.
2. cell Biology and molecular Biology, Roberties and Roberties.
3. Kubys Immunology by Goldby RA Kind T J Osborne BA, 6 th edition.
4. Industrial Microbiology by L E Casida.


PRINCIPAL
L.V.D. College, RAICHUR-03.

HOD,
Dept of Biotechnology.

H.O.D.
Dept. of Biotechnology
L.V.D. College, RAICHUR,



Taranath Shikshana Samsthe
DEC-15 - JAN-20 - 2023

LAXMI VENKATESH DESAI COLLEGE, RAICHUR

Bio-technology methods and applications

Time Table with effect from December 15, 2022 Class G.S.C. Department BIO-TECHNOLOGY Section _____ Room No. LAB

Time → Days ↓	8:30 am	9:30 am							
Mon	Add on course								
	B.Sc								
Tue	(A.C)								
	B.Sc								
Wed	(A.C)								
	B.Sc								
Thu	(A.C)								
	B.Sc								
Fri	(A.C)								
	B.Sc								
Sat	(A.C)								
	B.Sc								

A.C.D.
Head of Department

Name of the Staff: Hemalatha S.A

Miss. Srothi

L.V.D. College, RAICHUR

2022-23.

Taranath Shikshana Samsthe
Laxmi Venkatesh Desai College, Raichur

Department of Biotechnology

Report of Add_On course

"Biotechnology methods and applications"

Title of add on course:	Biotechnology methods and applications
Duration:	30 days
Started on:	15/12/2022
Completed on:	20/01/2023
Name of the Faculty:	Smt Hemalatha S. A. And Miss Jyothi
Total No of students admitted:	27
Total No of classes taken:	30
Total No of students benefited:	22



H.O.D.

Dept. of Biotechnology
L.V.D. College, RAICHUR.



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L.V.D. College, RAICHUR-07.



Taranath Shikshana Samsthe

LAXMI VENKATESH DESAI COLLEGE RAICHUR

(Re-Accredited by NAAC with 'B' Grade)

Certificate

This is to Certify that Miss. / Mr. Siddantha
 of B.Sc 2022-23 has completed the Certificate Course in
"Biotechnology methods and applications"
 Conducted by the Department of Biotechnology from
15-12-2022 to 20-01-2023

H.O.D.

Dept. of Biotechnology
Head of the Department



PRINCIPAL

L.V.D. COLLEGE RAICHUR
Principal