



SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)

Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

REF.NO:SSIP/ REQ/2023/003

Date: 03/07/2023

From

Department of Pharmaceutical Biotechnology,
SS institute of pharmacy,
Sankari, Salem (DIST) - 637301.

To

The principal,
SS institute of pharmacy,
Sankari, Salem (DIST) – 637301.


Subject: Letter for requesting permission to conduct **ADD ON COURSE** -Reg.

Respected sir,


We are requesting you to grant permission to conduct add-on course in the seminar hall on **12/07/2023 to 25/07/2023**. We wish to conduct add on course on the title “**Advanced Techniques In Enzymology**”. This add-on course program would be a great opportunity for students to learn and that would help to shape the students.

Thanking you,

Yours truly,


PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301




PRINCIPAL,
SS INSTITUTE OF PHARMACY,
KUPPANUR (PO), SANKARI (TK),
SALEM - 637301

NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) – 637301, Tamilnadu, India

Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



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29

DATE: 03/07/2023

CIRCULAR


This is to inform that will B.PHARM students have the schedule of following value - added course to be conducted by our SS Institute of Pharmacy and it as mentioned below.


COURSE NAME	SCHEDULE	DURATION	VENUE	RESOURCE PERSON
ADVANCED TECHNIQUES IN ENZYMOLGY	12/07/2023 to 25/07/2023	36 HOURS	SEMINAR HALL	DEEPA BHARATHI

All the above-mentioned students must enroll and actively participate in the course without fail.

Note: Certificates will be issued for the eligible students after completion of the course and examination.



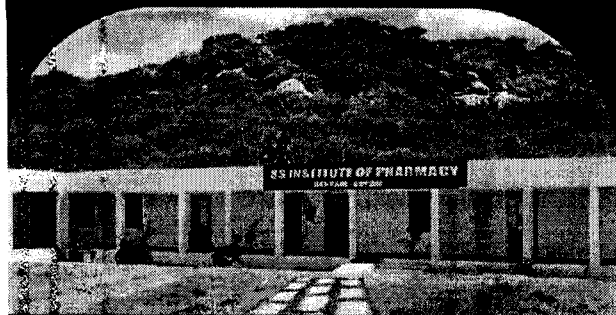

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SS INSTITUTE OF PHARMACY, SANKARI



Department Of Pharmaceutical biotechnology

VENUE: SSIP Seminar hall

DATE :12/07/2023 TO 25/07/2023

TIME :10:00am-01:00pm



COURSE TITLE

**Advanced Techniques in
Enzymology**

RESOURCE PERSON

V.Deepa Bharathi
M.Pharm
AssitantProfessor
SS Institute of
pharmacy.

TOPICS

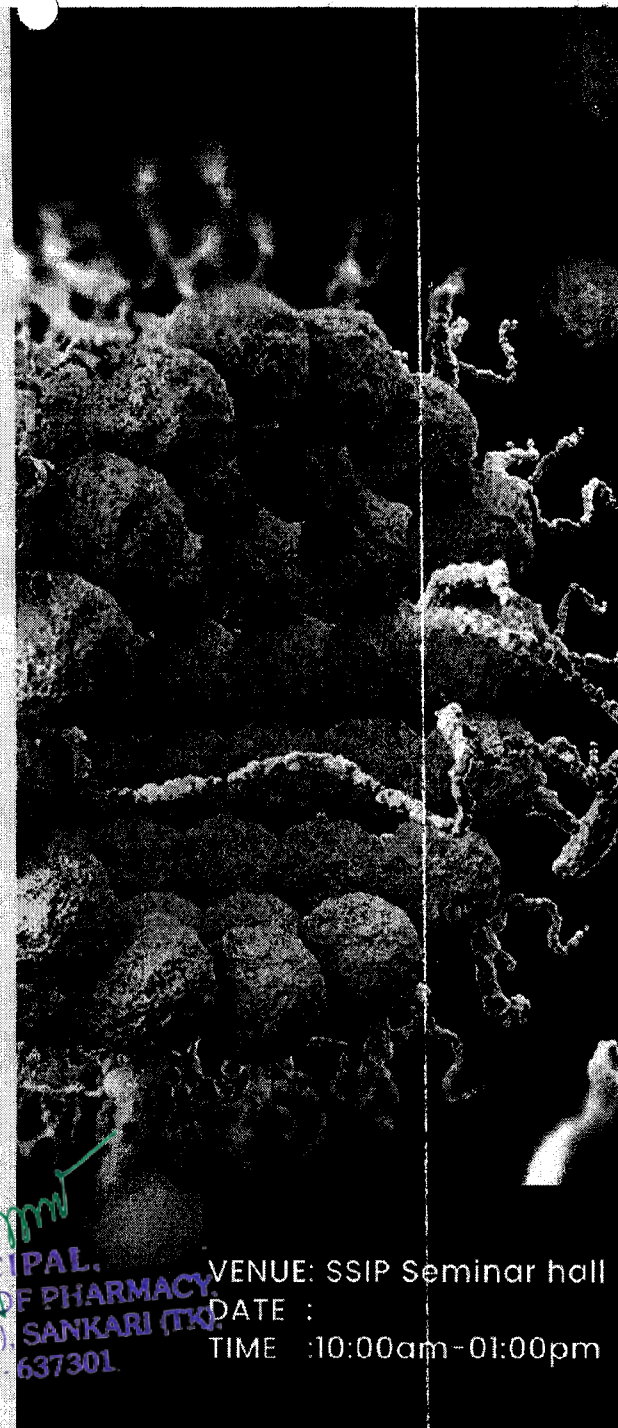
Enzyme Engineering and Design

Structural Enzymology

Enzyme Assays and Analytical
Techniques

Recent Advances and
Emerging Trends

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VENUE: SSIP Seminar hall

DATE :

TIME :10:00am-01:00pm



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SYLLABUS

ADVANCED TECHNIQUES IN ENZYMOLOGY

Sl. No.	Topic	Date
1	Structural Analysis and Mechanistic Studies <ul style="list-style-type: none">- X-ray Crystallography- Cryo-Electron Microscopy (Cryo-EM)- Nuclear Magnetic Resonance (NMR) Spectroscopy- Transition State Analysis and Intermediate Trapping	12/7/2023- 13/7/2023
2	Enzyme Kinetics and Dynamics <ul style="list-style-type: none">- Single-Molecule Enzymology- Stopped-Flow Spectroscopy- Kinetic Isotope Effects (KIE)- Analysis of Enthalpy and Entropy Contributions	14/7/2023- 15/7/2023
3	Enzyme-Substrate and Enzyme-Product Interactions <ul style="list-style-type: none">- Surface Plasmon Resonance (SPR)- Isothermal Titration Calorimetry (ITC)- Fluorescence Resonance Energy Transfer (FRET)- Mass Spectrometry and High-Performance Liquid Chromatography (HPLC)	17/7/2023- 19/7/2023
4	Computational and Engineering Techniques <ul style="list-style-type: none">- Molecular Dynamics Simulations- Quantum Mechanics/Molecular Mechanics (QM/MM) Simulations- Docking Studies and Virtual Screening- Site-Directed Mutagenesis and Directed Evolution	20/7/2023- 22/7/2023
5	Post-Translational Modifications and Applications <ul style="list-style-type: none">- Analysis of Phosphorylation, Glycosylation, and Acetylation- Enzyme Immobilization for Industrial Applications- Enzyme Design for Biotechnology, Medicine, and Environmental Processes	24/7/2023- 25/7/2023

RESOURCE PERSON: Deepa Bharathi

TOTAL HOURS: 36 Hrs



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ADD ON / CERTIFICATE VALUE ADDED COURSES ACADEMIC YEAR 2023-2024



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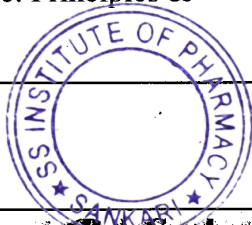
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ACADEMIC YEAR 2023-2024

S.NO	NAME OF ADD ON CERTIFICATES PROGRAMS	COURSE CODE	NO OF STUDEN ENROLLED	TYPE OF ADD ON CERTIFICATE PROGRAMS
1.	Advanced therapy topics in immunotherapy	23ATTI01	55	Self-framed course
2.	Green cell factories	23GCF02	58	Self-framed course
3.	Advanced techniques in enzymology .	23ATE03	70	Self-framed course
4.	Biomechanics and orthopaedic implants	23BOI04	58	Self-framed course
5.	Blockchain technology in pharmaceuticals	23BTP05	30	Self-framed course
6.	Cell designer modeling tool for gene-regulatory & biomedical networks	23CDMTGRBN0	27	Self-framed course
7.	Computational protein modeling and analytics	23CPMA07	59	Self-framed course
8.	Scientific writing in health research	24SWHR08	54	Self-framed course
9.	Systematic reviews for pharmacy health professionals	24SRPHP09	57	Self-framed course
10.	Advanced bioinformatics: Tools & applications	24ABTA10	111	Self-framed course
11.	Telemedicine: Principles & practices	24TPP11	58	Self-framed course



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ADD ON COURSE – ENROLLMENT LIST

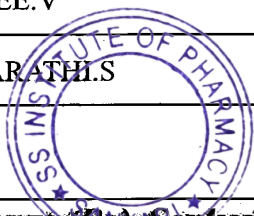
NAME OF ADD ON COURSE : ADVANCED TECHNIQUES IN ENZYMOLOGY

COURSE INSTRUCTORS : DEEPABHARATHI.M

YEAR OFFERED : 1st AND 3rd SEM B.PHARM

COURSE DURATION : 36 hrs

S.NO	NAME OF THE STUDENT	REGISTER NO	COURSE
1.	SHALINI.R	560022523545	1 st B.PHARM
2.	PUKAZENTHI.R	560022523538	1 st B.PHARM
3.	BALAMURUGAN.B	560021523512	2 nd B.PHARM
4.	KIRUTHIKA.P	560021523534	2 nd B.PHARM
5.	THIRUMALAI.R	560021523549	2 nd B.PHARM
6.	VIGNESH.C	560021523553	2 nd B.PHARM
7.	ANANDASIVAM.T	560021523504	2 nd B.PHARM
8.	YAZHINI.B	560021523559	2 nd B.PHARM
9.	POOJA.V	560022523529	1 st B.PHARM
10.	VIMAL.R	560021523556	2 nd B.PHARM
11.	AJAY.S	560022523502	1 st B.PHARM
12.	NAVEEN KUMAR.M	560022523526	1 st B.PHARM
13.	DHATCHNAMOORTHY.K	560021523518	2 nd B.PHARM
14.	VAITHEESWARI.V	560021523552	2 nd B.PHARM
15.	ANUSHREE.V	560022523505	1 st B.PHARM
16.	KAVIBHARATHI.S	560021523530	2 nd B.PHARM



Principal
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17.	KIRUBANIDHI.R	560021523533	2 nd B.PHARM
18.	KARTHICKRAJA.P	560022523519	1 st B.PHARM
19.	MYTHEENRAJ.R	560022523525	1 st B.PHARM
20.	POONGUZHALL.G	560022523530	1 st B.PHARM
21.	PRIYADHARSHINLP	560022523536	1 st B.PHARM
22.	KARTHICK KANNAN.S	560021523527	2 nd B.PHARM
23.	BHARANI KUMAR.P	560022523507	1 st B.PHARM
24.	KAJENDIRAN.K.M	560022523516	1 st B.PHARM
25.	JOTHIPRAKASH.P	560021523526	2 nd B.PHARM
26.	KARTHIKEYAN.M	560021523529	2 nd B.PHARM
27.	S.YUVAKIRUTHIGA	560021523560	2 nd B.PHARM
28.	VIJAYALAKSHIMI.V	560022523556	1 st B.PHARM
29.	GURUMOORTHIL.M	560021523524	2 nd B.PHARM
30.	ANBU .R	560021523505	2 nd B.PHARM
31.	SANTHOSHINI.C	560022523543	1 st B.PHARM
32.	AJAY.V	560022523503	1 st B.PHARM
33.	DHIVYA.N	560021523519	2 nd B.PHARM
34.	VIJAYASARATHI.S	560021523555	2 nd B.PHARM
35.	ABINESH. S	560021523501	2 nd B.PHARM
36.	SWATHI.V	560022523551	1 st B.PHARM
37.	GOKULANAVANI SRIM.N	560022523512	1 st B.PHARM
38.	MOHAMMED KABEER.A	560021523536	2 nd B.PHARM



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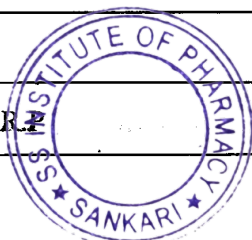
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39.	SUNDHAR.S	560021523545	2 nd B.PHARM
40.	AARTHI.H	560022523501	1 st B.PHARM
41.	PRIYADHARSHINI.S	560022523537	1 st B.PHARM
42.	RAGUL.R	560022523539	1 st B.PHARM
43.	GAJALAKSHMLK	560022523510	1 st B.PHARM
44.	RANISH.G	560021523537	2 nd B.PHARM
45.	SYED ABDULLA.A	560021523547	2 nd B.PHARM
46.	LAKSHMI.S	560022523522	1 st B.PHARM
47.	RAMAKRISHNAN.S	560022523540	1 st B.PHARM
48.	SUGAVANAM.C	560022523549	1 st B.PHARM
49.	THARUNKUMAR.S	560022523554	1 st B.PHARM
50.	SRIGANTH.K	560021523543	2 nd B.PHARM
51.	SETHURAMAN.P	560021523541	2 nd B.PHARM
52.	KATHIRVEL.G	560022523520	1 st B.PHARM
53.	GOPI.K	560021523523	2 nd B.PHARM
54.	PRAVEEN.T	560022523533	1 st B.PHARM
55.	THARANI.G	560022523553	1 st B.PHARM
56.	GAYATHRI.S	560021523521	2 nd B.PHARM
57.	KARTHICK.K	560021523528	2 nd B.PHARM
58.	THIRUMENINATHAN.M	560021523550	2 nd B.PHARM
59.	PRIYA.V	560022523535	1 st B.PHARM
60.	ARIVILKUMAR.P	560021523508	2 nd B.PHARM



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61.	VISHALATCHI.K	560021523558	2 nd B.PHARM
62.	SAKTHIVEL.S	560022523542	1 st B.PHARM
63.	KESAVAN.P	560021523532	2 nd B.PHARM
64.	MANISHA.A	560022523524	1 st B.PHARM
65.	MEGALA.G	560021523535	2 nd B.PHARM
66.	THANIGAIVALLI.S	560022523552	1 st B.PHARM
67.	ABISURYA .C	560021523503	2 nd B.PHARM
68.	SATHYA JASMINE.A	560021523540	2 nd B.PHARM
69.	SURIYA.M	560021523546	2 nd B.PHARM
70.	SRIDHAR.S	560022523548	1 st B.PHARM



[Signature]
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COURSE INSTRUCTORS : DEEPABHARATHI.M

YEAR OFFERED : 1st AND 3rd SEM B.PHARM

COURSE DURATION : 36 hrs

S.NO	NAME OF THE STUDENT	REGISTER NO	ATTENDANCE					
			12/7/23	13/7/23	14/7/23	15/7/23	17/7/23	18/7/23
1.	SHALINI.R	560022523545	P.Shali	P.Shali	P.Shali	P.Shali	P.Shali	P.Shali
2.	PUKAZENTHI.R	560022523538	Pu	Pu	Pu	Pu	Pu	Pu
3.	BALAMURUGAN.B	560021523512	Ba	Ba	Ba	Ba	Ba	Ba
4.	KIRUTHIKA.P	560021523534	K.P	K.P	K.P	K.P	K.P	K.P
5.	THIRUMALAI.R	560021523549	T.R	T.R	T.R	T.R	T.R	T.R
6.	VIGNESH.C	560021523553	V.C	V.C	V.C	V.C	V.C	V.C
7.	ANANDASIVAM.T	560021523504	A.T	A.T	A.T	A.T	A.T	A.T
8.	YAZHINI.B	560021523559	Y.B	Y.B	Y.B	Y.B	Y.B	Y.B
9.	POOJA.V	560022523529	P.V	P.V	P.V	P.V	P.V	P.V
10.	VIMAL.R	560021523556	V.R	V.R	V.R	V.R	V.R	V.R
11.	AJAY.S	560022523502	A.S	A.S	A.S	A.S	A.S	A.S
12.	NAVEEN KUMAR.M	560022523526	N.M	N.M	N.M	N.M	N.M	N.M
13.	DHATCHNAMOORTHIL.K	560021523518	D.K	D.K	D.K	D.K	D.K	D.K
14.	VAITHEESWARI.V	560021523552	V.V	V.V	V.V	V.V	V.V	V.V
15.	ANUSHREE.V	560022523505	A.V	A.V	A.V	A.V	A.V	A.V
16.	KAVIBHARATHI.S	560021523530	K.S	K.S	K.S	K.S	K.S	K.S
17.	KIRUBANIDHI.R	560021523533	K.R	K.R	K.R	K.R	K.R	K.R
18.	KARTHICKRAJ.P	560022523510	K.P	K.P	K.P	K.P	K.P	K.P

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19.	MYTHEENRAJ.R	560022523525	Rm	Rm	Rm	Rm	Rm	Rm
20.	POONGUZHALI.G	560022523530	Ch	Ch	Ch	Ch	Ch	Ch
21.	PRIYADHARSHINI.P	560022523536	Pr	Pr	Pr	Pr	Pr	Pr
22.	KARTHICK KANNAN.S	560021523527	Sk	Sk	Sk	Sk	Sk	Sk
23.	BHARANI KUMAR.P	560022523507	Bk	Bk	Bk	Bk	Bk	Bk
24.	KAJENDIRAN.K.M	560022523516	X	X	X	X	X	X
25.	JOTHIPRAKASH.P	560021523526	Lj	Lj	Lj	Lj	Lj	Lj
26.	KARTHIKEYAN.M	560021523529	X	X	X	X	X	X
27.	S.YUVAKIRUTHIGA	560021523560	Sy	Sy	Sy	Sy	Sy	Sy
28.	VIJAYALAKSHIMI.V	560022523556	Vl	Vl	Vl	Vl	Vl	Vl
29.	GURUMOORTHY.M	560021523524	M.Gu	M.Gu	M.Gu	M.Gu	M.Gu	M.Gu
30.	ANBU .R	560021523505	A	A	A	A	A	A
31.	SANTHOSHINI.C	560022523543	S	S	S	S	S	S
32.	AJAY.V	560022523503	A	A	A	A	A	A
33.	DHIVYA.N	560021523519	N	N	N	N	N	N
34.	VIJAYASARATHI.S	560021523555	S.vj	S.vj	S.vj	S.vj	S.vj	S.vj
35.	ABINESH. S	560021523501	A	A	A	A	A	A
36.	SWATHI.V	560022523551	V	V	V	V	V	V
37.	GOKULANAVANI SRI.M.N	560022523512	M.N.	M.N.	M.N.	M.N.	M.N.	M.N.
38.	MOHAMMED KABEER.A	560021523536	M.K	M.K	M.K	M.K	M.K	M.K
39.	SUNDHAR.S	560021523545	S	S	S	S	S	S
40.	AARTHI.H	560022523501	A	A	A	A	A	A
41.	PRIYADHARSHINI.S	560022523537	Pr	Pr	Pr	Pr	Pr	Pr
42.	RAGUL.R	560022523539	R	R	R	R	R	R
43.	GAJALAKSHMI.K	560022523510	G	G	G	G	G	G
44.	RANISH.G	560021523537	R	R	R	R	R	R
45.	SYED ABDULLA.A	560021523547	S	S	S	S	S	S



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46.	LAKSHMIS	560022523522	Lakshmi	Laksh	Laksh	Laksh	Laksh	Laksh
47.	RAMAKRISHNAN.S	560022523540	Ramkrishnan	Ramkrish	Ramkrish	Ramkrish	Ramkrish	Ramkrish
48.	SUGAVANAM.C	560022523549	Sugavanam	Sugavan	Sugavan	Sugavan	Sugavan	Sugavan
49.	THARUNKUMAR.S	560022523554	Tharunkumar	Tharunkum	Tharunkum	Tharunkum	Tharunkum	Tharunkum
50.	SRIGANTHI.K	560021523543	Sriganthi	Sriganth	Sriganth	Sriganth	Sriganth	Sriganth
51.	SETHURAMAN.P	560021523541	Sethuraman	Sethuram	Sethuram	Sethuram	Sethuram	Sethuram
52.	KATHIRVEL.G	560022523520	Kathirvel	Kathirvel	Kathirvel	Kathirvel	Kathirvel	Kathirvel
53.	GOPI.K	560021523523	Gopi	Gopi	Gopi	Gopi	Gopi	Gopi
54.	PRAVEEN.T	560022523533	Praveen	Praveen	Praveen	Praveen	Praveen	Praveen
55.	THARANIG	560022523553	Tharani	Tharani	Tharani	Tharani	Tharani	Tharani
56.	GAYATHRI.S	560021523521	Gayathri	Gayathri	Gayathri	Gayathri	Gayathri	Gayathri
57.	KARTHIK.K	560021523528	Karthik	Karthik	Karthik	Karthik	Karthik	Karthik
58.	THIRUMENINATHAN.M	560021523550	Thirumeninathan	Thirumenin	Thirumenin	Thirumenin	Thirumenin	Thirumenin
59.	PRIYA.V	560022523535	Priya	Priya	Priya	Priya	Priya	Priya
60.	ARIVILKUMAR.P	560021523508	Arivilkumar	Arivilkum	Arivilkum	Arivilkum	Arivilkum	Arivilkum
61.	VISHALATCHI.K	560021523558	Vishalatchi	Vishalatch	Vishalatch	Vishalatch	Vishalatch	Vishalatch
62.	SAKTHIVEL.S	560022523542	Sakthivel	Sakthivel	Sakthivel	Sakthivel	Sakthivel	Sakthivel
63.	KESAVAN.P	560021523532	Kesavan	Kesavan	Kesavan	Kesavan	Kesavan	Kesavan
64.	MANISHA.A	560022523524	Manisha	Manisha	Manisha	Manisha	Manisha	Manisha
65.	MEGALA.G	560021523535	Megala	Megala	Megala	Megala	Megala	Megala
66.	THANIGAIVALLI.S	560022523552	Thanigaivalli	Thanigaiva	Thanigaiva	Thanigaiva	Thanigaiva	Thanigaiva
67.	ABISURYA .C	560021523503	Abisurya	Abisurya	Abisurya	Abisurya	Abisurya	Abisurya
68.	SATHYA JASMINE.A	560021523540	Sathya Jasmine	Sathya Jasm	Sathya Jasm	Sathya Jasm	Sathya Jasm	Sathya Jasm
69.	SURIYA.M	560021523546	Suriya	Suriya	Suriya	Suriya	Suriya	Suriya
70.	SRIDHAR.S	560022523548	Sridhar	Sridhar	Sridhar	Sridhar	Sridhar	Sridhar



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NH-544, Kuppanur (Po), Sankari (Tk), Salem(Dt) - 637301, Phone : 04283 241080 | E-mail : ssip1718@gmail.com | Website : www.ssip.edu.in



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ADD ON COURSE	ADVANCED TECHNIQUES IN ENZYMOLOGY
DEPARTMENT	PHARMACEUTICAL BIOTECHNOLOGY
ACADEMIC YEAR	2023-2024
DATE	12/07/2023 to 25/07/2023
VENUE	SEMINAR HALL
NAME: <i>Calamusugan . B</i>	COURSE: <i>III . Sem</i>

ANSWER ALL THE QUESTIONS:

DATE: 25/07/2023

MULTIPLE CHOICE QUESTIONS

MARKS: 15

1. Which technique is used to determine the three-dimensional structure of an enzyme?

- a) Mass spectrometry
- ☒ b) X-ray crystallography
- c) Gel electrophoresis
- d) Nuclear magnetic resonance (NMR) spectroscopy

2. What is the primary purpose of site-directed mutagenesis in enzymology?

- a) To determine the kinetic properties of an enzyme
- ☒ b) To introduce specific mutations to study their effects on enzyme function
- c) To purify enzymes from complex mixtures
- d) To measure enzyme concentration

3. Which technique is used to measure enzyme activity in real-time, often using a fluorescent or colorimetric substrate?

- ☒ a) Spectrophotometry
- b) Chromatography
- c) Electrophoresis
- d) Mass spectrometry

4. What is the advantage of using high-performance liquid chromatography (HPLC) in enzymology?

- a) It provides real-time kinetic data
- ☒ b) It allows for the separation and quantification of enzyme substrates and products
- c) It directly measures enzyme activity
- d) It visualizes enzyme structure

12

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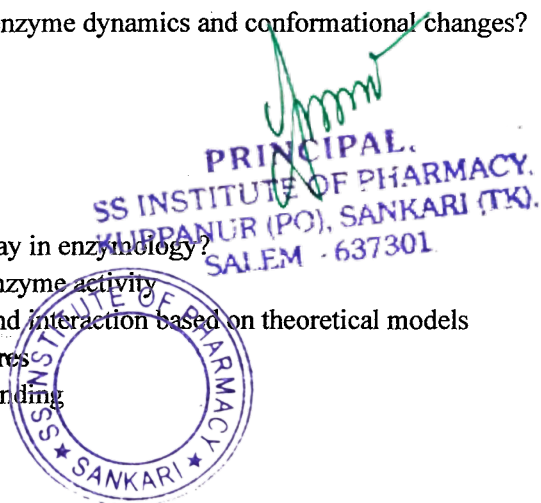


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5. Which method can be used to investigate enzyme-substrate interactions at the atomic level?
 - a) Isothermal titration calorimetry (ITC)
 - b) Electrospray ionization (ESI)
 - c) Differential scanning calorimetry (DSC)
 - d) Surface plasmon resonance (SPR)
6. How does fluorescence resonance energy transfer (FRET) aid in studying enzyme activity?
 - a) By measuring the heat released during enzyme reactions
 - b) By detecting changes in fluorescence between donor and acceptor molecules in real-time
 - c) By separating enzyme mixtures based on size
 - d) By visualizing enzyme crystals
7. Which technique is utilized to determine the kinetic parameters (K_m and V_{max}) of an enzyme-catalyzed reaction?
 - a) Western blotting
 - b) Michaelis-Menten kinetics
 - c) PCR amplification
 - d) Immunofluorescence
8. What is the principle behind using mass spectrometry (MS) for enzyme analysis?
 - a) It measures the concentration of enzyme substrates
 - b) It separates and identifies molecules based on their mass-to-charge ratio
 - c) It quantifies enzyme activity based on color change
 - d) It measures the size of enzyme crystals
9. Which advanced technique is used to study enzyme dynamics and conformational changes?
 - a) Circular dichroism (CD) spectroscopy
 - b) Cryo-electron microscopy (cryo-EM)
 - c) Atomic force microscopy (AFM)
 - d) Gas chromatography (GC)
10. What role does computational modeling play in enzymology?
 - a) It provides real-time measurements of enzyme activity
 - b) It predicts enzyme structure, function, and interaction based on theoretical models
 - c) It purifies enzymes from complex mixtures
 - d) It directly measures enzyme-substrate binding





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11. Which technique is used for detecting enzyme activity through changes in pH?
 - a) Enzyme-linked immunosorbent assay (ELISA)
 - ☒ b) pH indicator-based assays
 - c) Atomic absorption spectroscopy
 - d) Gel filtration chromatography
12. In enzyme kinetics, what is the significance of determining the turnover number (k_{cat})?
 - ☒ a) It measures the maximum rate of substrate conversion per enzyme molecule
 - b) It quantifies the enzyme concentration in a sample
 - c) It identifies the enzyme's binding affinity for its substrate
 - d) It determines the enzyme's optimal temperature
13. How does isothermal titration calorimetry (ITC) contribute to enzyme research?
 - a) By measuring the concentration of enzyme products
 - b) By detecting binding interactions and measuring thermodynamic parameters
 - ☒ c) By separating enzyme-substrate complexes
 - d) By visualizing enzyme-substrate binding sites
14. Which technique allows for the study of enzyme interactions with ligands in a microarray format?
 - ☒ a) Microarray analysis
 - b) Nuclear magnetic resonance (NMR) spectroscopy
 - c) Transmission electron microscopy (TEM)
 - d) Gel electrophoresis
15. What is the use of differential scanning calorimetry (DSC) in enzyme studies?
 - a) To measure enzyme activity in solution
 - b) To study enzyme thermal stability and unfolding
 - ☒ c) To quantify enzyme-substrate interactions
 - d) To separate enzyme isoforms





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ADD ON COURSE	ADVANCED TECHNIQUES IN ENZYMOLOGY
DEPARTMENT	PHARMACEUTICAL BIOTECHNOLOGY
ACADEMIC YEAR	2023-2024
DATE	12/07/2023 to 25/07/2023

ANSWER KEY:

DATE: 25/07/2023

MULTIPLE CHOICE QUESTIONS

MARKS: 15

- Which technique is used to determine the three-dimensional structure of an enzyme?
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- Which technique is used to measure enzyme activity in real-time, often using a fluorescent or colorimetric substrate?
 - Spectrophotometry**
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 - Mass spectrometry
- What is the advantage of using high-performance liquid chromatography (HPLC) in enzymology?
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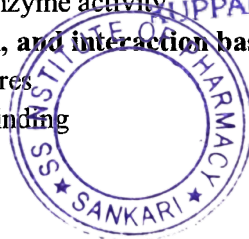
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 - c) Atomic absorption spectroscopy
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 - d) It determines the enzyme's optimal temperature
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 - c) By separating enzyme-substrate complexes
 - d) By visualizing enzyme-substrate binding sites
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 - b) Nuclear magnetic resonance (NMR) spectroscopy
 - c) Transmission electron microscopy (TEM)
 - d) Gel electrophoresis
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 - c) To quantify enzyme-substrate interactions
 - d) To separate enzyme isoforms



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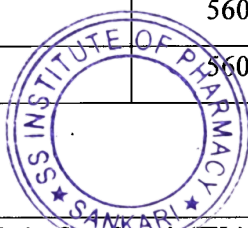
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ADD ON COURSE – MARK LIST

NAME OF ADD ON COURSE : ADVANCED TECHNIQUES IN ENZYMOLOGY
COURSE INSTRUCTORS : DEEPABHARATHI.M
YEAR OFFERED : 1st AND 3rd SEM B.PHARM

COURSE DURATION : 36hrs

S.NO	NAME OF STUDENT	REGISTER NO	MARKS (15)	PERCENTAGE (%)
1.	SHALINI.R	560022523545	12	80%
2.	PUKAZENTHI.R	560022523538	12	80%
3.	BALAMURUGAN.B	560021523512	12	80%
4.	KIRUTHIKA.P	560021523534	13	86%
5.	THIRUMALAI.R	560021523549	13	86%
6.	VIGNESH.C	560021523553	15	100%
7.	ANANDASIVAM.T	560021523504	12	80%
8.	YAZHINI.B	560021523559	12	80%
9.	POOJA.V	560022523529	13	86%
10.	VIMAL.R	560021523556	12	80%
11.	AJAY.S	560022523502	12	80%
12.	NAVEEN KUMAR.M	560022523526	13	86%
13.	DHATCHNAMOORTH.K	560021523518	15	100%
14.	VAITHEESWARI.V	560021523552	15	100%
15.	ANUSHREE.V	560022523505	14	93%
16.	KAVIBHARATHI.S	560021523530	15	100%
17.	KIRUBANIDHI.R	560021523533	13	86%
18.	KARTHICKRAJA.P	560022523519	13	86%
19.	MYTHEENRAJ.R	560022523525	13	80%



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20.	POONGUZHALI.G	560022523530	12	80%
21.	PRIYADHARSHINI.P	560022523536	12	80%
22.	KARTHICK KANNAN.S	560021523527	12	80%
23.	BHARANI KUMAR.P	560022523507	13	86%
24.	KAJENDIRAN.K.M	560022523516	14	93%
25.	JOTHIPRAKASH.P	560021523526	12	80%
26.	KARTHIKEYAN.M	560021523529	14	93%
27.	S.YUVAKIRUTHIGA	560021523560	15	100%
28.	VIJAYALAKSHIMI.V	560022523556	13	86%
29.	GURUMOORTHIM	560021523524	12	80%
30.	ANBU .R	560021523505	12	80%
31.	SANTHOSHINI.C	560022523543	13	86%
32.	AJAY.V	560022523503	15	100%
33.	DHIVYA.N	560021523519	13	86%
34.	VIJAYASARATHI.S	560021523555	13	86%
35.	ABINESH. S	560021523501	12	80%
36.	SWATHI.V	560022523551	12	80%
37.	GOKULANAVANI SRIM.N	560022523512	15	100%
38.	MOHAMMED KABEER.A	560021523536	13	86%
39.	SUNDHAR.S	560021523545	14	93%
40.	AARTHI.H	560022523501	15	100%
41.	PRIYADHARSHINI.S	560022523537	13	86%
42.	RAGUL.R	560022523539	13	86%
43.	GAJALAKSHMI.K	560022523510	12	80%
44.	RANISH.G	560021523537	13	86%
45.	SYED ABULLA.A	560021523547	12	80%
46.	LAKSHMI.S	560022523522	12	80%
47.	RAMAKRISHNAN.S	560022523540	12	80%

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48.	SUGAVANAM.C	560022523549	13	86%
49.	THARUNKUMAR.S	560022523554	13	86%
50.	SRIGANTH.K	560021523543	13	86%
51.	SETHURAMAN.P	560021523541	13	86%
52.	KATHIRVEL.G	560022523520	12	80%
53.	GOPI.K	560021523523	12	80%
54.	PRAVEEN.T	560022523533	12	80%
55.	THARANI.G	560022523553	13	86%
56.	GAYATHRI.S	560021523521	13	86%
57.	KARTHICK.K	560021523528	15	100%
58.	THIRUMENINATHAN.M	560021523550	13	86%
59.	PRIYA.V	560022523535	12	80%
60.	ARIVILKUMAR.P	560021523508	13	86%
61.	VISHALATCHI.K	560021523558	12	80%
62.	SAKTHIVEL.S	560022523542	12	80%
63.	KESAVAN.P	560021523532	12	80%
64.	MANISHA.A	560022523524	13	86%
65.	MEGALA.G	560021523535	13	86%
66.	THANIGAIVALLI.S	560022523552	13	86%
67.	ABISURYA .C	560021523503	13	86%
68.	SATHYA JASMINE.A	560021523540	12	80%
69.	SURIYA.M	560021523546	12	80%
70.	SRIDHAR.S	560022523548	12	80%

TOTAL NUMBER OF STUDENT : 70

TOTAL NUMBER OF PERCENTAGE : 85.9%

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ADD ON COURSE : SUMMARY REPORT

Course code and Name : 23ATE03/ Advanced Techniques In Enzymology

Date Of Add On Programme : 12/07/2023 to 25/07/2023

Course Duration : 36 Hours

Year Offered : 1st & 3rd Sem B.Pharm

Course Instructors : Deepa Bharathi.,M.Pharm.

Course Outcomes :

- **Enzyme Engineering:** Learn methods for engineering enzymes to enhance their properties or create new functionalities. This includes techniques like directed evolution, site-directed mutagenesis, and protein design strategies.
- **Mechanistic Studies:** Explore advanced methods for studying enzyme mechanisms, including isotopic labeling, spectroscopy, and computational modeling. Understand how these techniques can elucidate detailed reaction pathways and enzyme-substrate interactions

Course Type : Add on Course

Assessment Mode:

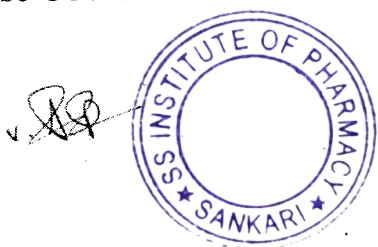
Total Duration : 36 Hours

Number of Participants : 70

Scheme of Exam : MCQ type, offline Mode

Date of Exam : 25/07/2023

Course Coordinator



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VALUE ADDED COURSE

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Certificate of Participation


C. SUGAVANAM

Has appreciated for his /her participation in VALUE ADDED COURSE On
ADVANCED TECHNIQUES IN ENZYMOLOGY

12/07/2023 TO 25/07/2023


COORDINATOR




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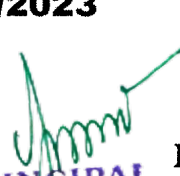
V. AJAY

Has appreciated for his /her participation in VALUE ADDED COURSE On
ADVANCED TECHNIQUES IN ENZYMOLOGY

12/07/2023 TO 25/07/2023


COORDINATOR

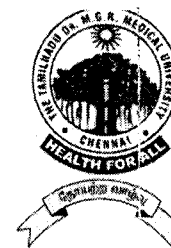



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VALUE ADDED COURSE

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Certificate of Participation


11. AARTHI

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12/07/2023 TO 25/07/2023


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STUDENT FEEDBACK FORM

STUDENT NAME: S. Ajay.

DATE: 25/07/2023.

YEAR/COURSE: B. Pharm - I Sem.

NAME OF THE ADD ON COURSE: Advanced Techniques in Enzymology.

COURSE CODE: 23ATED3.

DURATION: 36 hrs.

EVALUATE HONESTLY:

Questions	Excellent	Good	Fair	Poor
How was the objectives of the training	✓			
How satisfied are you with our seminar		✓		
How would you rate the clarity and effectiveness of the presenter's delivery	✓			
Was the seminar duration appropriate		✓		
How engaging and interactive was the seminar	✓			
Usefulness of the information provided		✓		
Overall quality of session	✓			



Ajay S.
SIGNATURE

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PHOTOGRAPH

DATE: 14/7/23

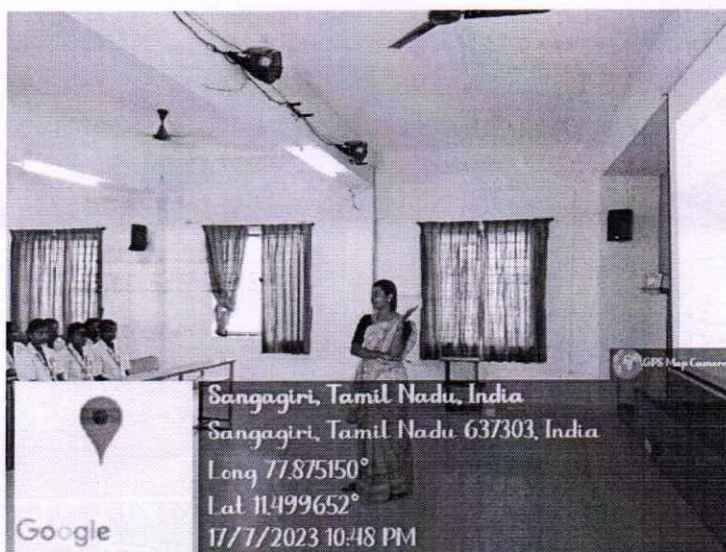
ADVANCED TECHNIQUES IN ENZYMOLOGY

NAME OF ADD ON COURSE : ADVANCED TECHNIQUES IN ENZYMOLOGY

COURSE INSTRUCTORS : DEEPABHARATHI.M


YEAR OFFERED : 1st AND 3rd SEM B.PHARM

COURSE DURATION : 36 hrs



Add-on course regarding the Topic Application of Advanced Techniques In Enzymology conducted 14/7/23, the speech delivered **Deepa Bharathi.M M.Pharm.** which was an interactive session and students could able to understand the Application of Advanced Techniques In Enzymology in the fields of pharmaceutical sciences




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