

**Shri Shivaji Education Society's  
Board for Higher Education Vidyanagar Karad.**



**YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD**

**Department of Chemistry &  
B.Sc. II Biochemistry  
SHORT TERM COURSE**

CCD-01

**Chromatographic techniques in Biochemistry**

**2021-22**

**Index**

**Total Students: 23**

**Duration: 03 Months**

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Estd. 1958

|| Be One with the downtrodden and the underprivileged ||  
Shri Shivaji Education Society Karad, Board For Higher Education's

## YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Vidyanagar, KARAD - 415 124 Dist. Satara ( Maharashtra)

☎ 02164 - 271356, 271357 e-mail : prinyccsk@gmail.com

UDISE Code - 27310207715 Index No. J 21.02.002

Reaccredited B<sup>++</sup> Level by NAAC, Bangalore

AN ISO 9001-2015 CERTIFIED COLLEGE REG. NO. : RQ91/5237

Department of chemistry &

B.Sc. II Biochemistry

Certificate course In **"Chromatographic techniques in Biochemistry"**

Year 2021-2022

Board of Studies (BOS)

Date : 16/11/2021

Certificate Course in **"Chromatographic techniques in Biochemistry"** is going to start in the department of Chemistry, YashwantraoChavan College of Science, Karad. Following committee is constituted for syllabus framing of the said course

Board of Studies ( BOS ) members

Sr No	Name of the Member	Designation	Sign
1	Principal Dr. S. B. Kengar	Chairman	
2	Prof. Dr. S. H. Burungale	Head of the Department	
3	Mrs.N.R.Panwal	Course Coordinator	



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### Department of Chemistry &

### B.Sc. II Biochemistry

Year 2021-2022

Syllabus Approved Letter

Date : 16/11/2021


The IQAC Committee has approved the syllabus of the short term course to be conducted by the Department of Chemistry.

Sr. No.	Name of The Course	Type of The Course
1	Chromatographic techniques in Biochemistry	Short Term Course

  
Course Co-ordinator

  
IQAC Coordinator

  
Head

  
Principal  
Yashwantrao Chavan College  
of Science, Karad

Internal Quality Assurance Cell (IQAC)  
Co-ordinator,  
Yashwantrao Chavan College  
of Science, Karad

Head  
Department of Chemistry  
Yashwantrao Chavan College of  
Science, Karad



**YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD.**  
**Department of chemistry**  
**B.Sc. II Biochemistry**  
**"Chromatographic techniques in Biochemistry"**  
**Syllabus**

**Unit-1**

Introduction to chromatographic techniques:- (10)

1. Definition of chromatography.
2. Types of chromatography.
3. Application of chromatography.

**Unit-2**

Biochemical technique (10)

1. Development of chromatograms.
2. Principle and working of paper chromatography.
3. Types of Ion exchangers.
4. Principle and working of Ion exchange chromatography.

**List of practicals:-**

1. Paper chromatographic separation and identification of Copper and Nickel.
2. Paper chromatographic separation and identification of Cobalt and Nickel.
3. Estimation of Magnesium/Zinc by Ion-exchange method.
4. Estimation of sodium by Ion-exchange method.



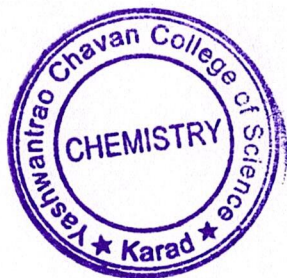
**Yashwantrao Chavan College of Science, Karad**

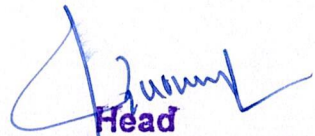
**Department of Chemistry &**

**B.Sc. II Biochemistry**

**Short term Course – Chromatographic Technique in Biochemistry (2021-22)**

Course Code	ShortTerm C CD - 01	Course:	ChromatographicTechniqueinBiochemistry	
Prepared by	Mrs.NehaR.Panwal		Date	2021-2022
TargetGroup:B.Sc.II(Biochemistry)				
Pre-requisites	<ul style="list-style-type: none"><li>• Basic(10+2)knowledgeofsciencefaculty</li><li>• Goodanalyticalskills.</li><li>• Basicknowledgeregardinglaboratoryconcepts.</li></ul>			
CourseOutcomes				
Attheendofthecoursethestudentsshouldbeableto:				
CO1	Enabletheseperationand identificationofcomponents.			
CO2	Enablethepurificationofcomponents.			
CO3	Helpsinqualitativeandquantitativeanalysis.			
CO4	Learningandcoherentunderstandingofpaperandionexchangechromatography.			



  
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**Department of Chemistry**  
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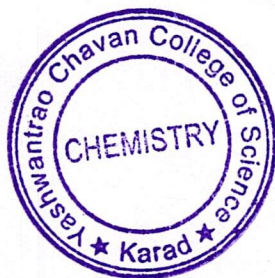
Department of Chemistry &amp;

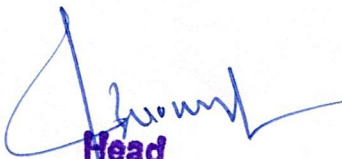
B.Sc. II Biochemistry

Notice

Date : 16/11/2021

All the Students of the B. Sc. II are hereby informed that the Department of BioChemistry is going to run a short term course entitled as **"chromatographic techniques in Biochemistry "** Interested Candidates enroll their names to Mrs. N.R.Panwal course Co-ordinator on or before 30<sup>th</sup> November 2021.



  
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**Department of Chemistry**

**B.Sc. II Biochemistry**

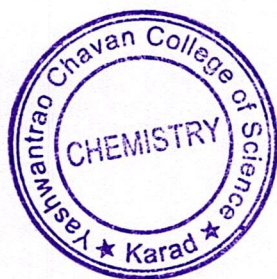
**Short Term Course**

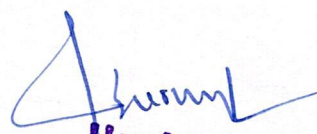
**"Chromatographic techniques in Biochemistry"**

**Year 2021 - 2022**

**Date : 28 /11/2021**

All the students those who are enrolled their names for this course are hereby informed that their theory lecture is going to start from 1<sup>st</sup> Dec. 2021. All concerned should note and follow



  
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**Department of Chemistry**

**B.Sc. II Biochemistry**

**Short Term Course**

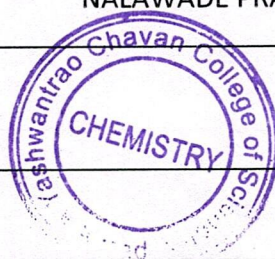
**"Chromatographic techniques in Biochemistry"**

**Year 2021 - 2022**

**Name of the Enrolled Students**

**Date : 01 /11/2022**

Sr no	Roll No	Name of student	Student sign
1	2406	BADEKAR SHUBHAM PRASHANT	<u>SPBadekar</u>
2	2407	CHAUGHULE ARIYAN RAJKUMAR	<u>AR Chaughule</u>
3	2408	DHEB RUPALI NATHURAM	<u>R.N.P</u>
4	2409	GURAV VISHWAMBAR SUNIL	<u>GS</u>
5	2410	HANKARE PARUSHURAM ANIL	<u>PAH.</u>
6	2411	JADHAV SHREYASH RAJESH	<u>SRJadhav</u>
7	2412	JADHAV SURAJ DILIP	<u>SDJadhav</u>
8	2413	JADHAV SWETA SHSHIKANT	<u>SS.</u>
9	2414	JADHAV TEJASVINI SUDHAKAR	<u>T.S. Jadhav</u>
10	2415	JAGTAP VAISHANAVI SANJAY	<u>VS Jagtap</u>
11	2416	JAMBHALE SANSKRUTI SUBHASH	<u>JSB</u>
12	2417	KARAPE DHANSHRI MAHADEV	<u>KDM</u>
13	2418	LOHAR VISHAL BHAGWAT	<u>Vishal</u>
14	2419	MALAVE PRANALI VAMAN	<u>PM</u>
15	2420	MANE KALYANI DHANAJI	<u>Kmane</u>
16	2421	NALAWADE PRATIKSHA RAJENDRA	<u>PNalawade</u>

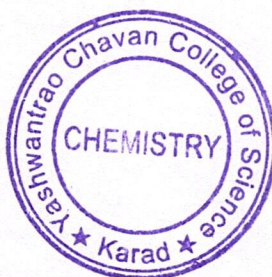


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CCD-01

17	2422	PATIL MAYURESHWAR HANMANT	<u>M.P. Patil</u>
18	2423	POL RUTUJA SUBHASH	<u>Rutuja!</u>
19	2424	SALUNKHE PRANITA SANJAY	<u>Pranita</u>
20	2425	SALUNKHE PRATHMESH VAMAN	<u>P.V.S.</u>
21	2426	SAPKAL SANIKA DHANAJI	<u>S.S.K.</u>
22	2427	SAPKAL SUPRIYA SANJAY	<u>Supriya</u>
23	2428	SHEWALE PRYANKA KASHINATH	<u>P.K.S.</u>



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**YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD.**

Department of Chemistry &  
B.Sc. II Biochemistry

Certificate course In **"Chromatographic techniques in Biochemistry"**

Year 2021-2022

- |                             |                          |
|-----------------------------|--------------------------|
| 1. Class                    | : B. Sc. II              |
| 2. Duration of the Course   | : 3 Months               |
| 3. Capacity                 | : 23                     |
| 4. No. of Students Enrolled | : 23                     |
| 5. Theory Examination       | : Last week of February. |
| 6. Practical Examination    | : First week of March    |

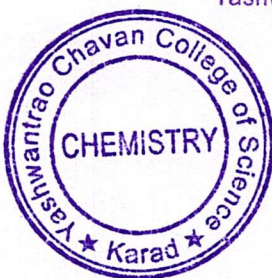
  
Course Co-ordinator

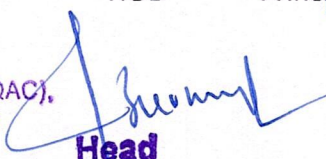
  
IQAC Coordinator

  
HOD

Principal

**Co-ordinator,**  
Internal Quality Assurance Cell (IQAC),  
Yashwantrao Chavan College  
of Science, Karad



  
**Head**  
Department of Chemistry  
Yashwantrao Chavan College of  
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**YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD**

**Department of Chemistry**

**B.Sc. II Biochemistry**

**Short Term Course**

**“Chromatographic techniques in Biochemistry”**

**Year 2021 - 2022**

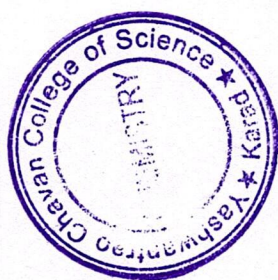
**Theory Time Table**

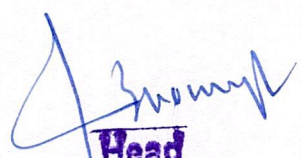
**Dec. 2021 to Jan.2022**

Lect. Time	WED	THU
9.40-10.30	G30 NRP	G30 NRP

**Feb. 2022 Practical Time**

Lect. Time	SAT
8.50- 9.40	NRP
9.40- 10.30	



  
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**YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD****Department of Chemistry&****B.Sc. II Biochemistry****Short Term Course****"Chromatographic techniques in Biochemistry"****Year 2021 - 2022****Question Paper****Q.1) Multiple Choice Questions :-****(Marks:30)**

**1. Chromatography is a physical method that is used to separate and analyse**  
\_\_\_\_\_

a) Simple mixtures

b) Complex mixtures

c) Viscous mixtures

d) Metals

**2. In chromatography, the stationary phase can be \_\_\_\_\_ supported on a solid.**

a) Solid or liquid

b) Liquid or gas

c) Solid only

d) Liquid only

**3. In chromatography, which of the following can the mobile phase be made of?**

a) Solid or liquid

b) Liquid or gas

c) Gas only

d) Liquid only

**4. Chromatography cannot be used to purify volatile substances**

a) True

b) False



5. Ion exchange chromatography is based on the .....

- A. electrostatic attraction    B. electrical mobility of ionic species  
C. adsorption chromatography    D. partition chromatography

6. Chromatography cannot be used to separate delicate products.

- a) True    b) False

7. In which of the following type of paper chromatography does the mobile phase move horizontally over a circular sheet of paper?

- a) Ascending paper chromatography    b) Descending paper chromatography  
c) Radial paper chromatography    d) Ascending – descending chromatography

8. Which of the following types of chromatography involves the process, where mobile phase moves through the stationary phase by the influence of gravity or capillary action?

- a) Column Chromatography  
b) High Pressure Liquid Chromatography  
c) Gas Chromatography  
d) Planar Chromatography

9. Which of the following is used as a spraying reagent in paper chromatography?

- (a) Concentrated hydrochloric acid solution  
(b) Sodium chloride solution  
(c) Ninhydrin solution  
(d) Copper sulphate solution

**10.** Which of the following is not a development technique in paper chromatography?

- (a) High-Pressure Liquid Chromatography
- (b) Ascending Chromatography
- (c) Descending Chromatography
- (d) Two-Dimensional Chromatography

**11.** The pattern on the paper in Paper chromatography is called \_\_\_\_\_

- (a) Chroma
- (b) Chromatograph
- (c) Chroming
- (d) Chromatogram

**12.** What is the size of the spot in paper chromatography?

- (a) 1 - 2 mm
- (b) 2 - 5 mm
- (c) 6 - 8 mm
- (d) 7 - 8 mm

**13** In anion exchange chromatography,

- (A) the column contains negatively charged beads where positively charged proteins bind
- (B) the column contains positively charged beads where negatively charged proteins bind
- (C) the column contains both positive and negatively charged beads where proteins bind depending on their net charge
- (D) all of these



**14** Chromatography is generally used for the separation of mixtures based on the differences in their

A Shape

B Size

C Structure

D All Of Above

**15.** Ion-exchange chromatography is used for the separation of

A) polar molecules

B) non polar molecules

C) non polar molecules

D) both of above

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**Department of Chemistry &**

**B.Sc. II Biochemistry**

**Short Term Course**

**"Chromatographic techniques in Biochemistry"**

**Year 2021-2022**

**Practical Exam**

**Marks-40**

Q-1) Paper chromatographic separation and identification of Copper and Nickel. (20)

Q-2) Estimation of sodium by Ion-exchange method. (20)



**YashwantraoChavan College of Science, Karad**

**Department of Chemistry&**

**B.Sc. II Biochemistry**

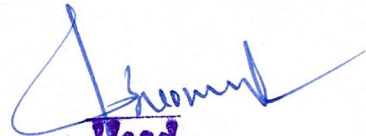
**Short term Course -Chromatographic techniques in Biochemistry” (2021-22)**

**Mark list**

<b>Roll. No.</b>	<b>Name of Student</b>	<b>Mid-course exam (Out of 30)</b>	<b>Final Exam (Out of 30)</b>	<b>Practical Exam (Out of 40)</b>	<b>Total (Out of 100)</b>
2406	BADEKAR SHUBHAM PRASHANT	22	24	40	86
2407	CHAUGHULE ARIYAN RAJKUMAR	23	25	40	88
2408	DHEB RUPALI NATHURAM	21	24	40	85
2409	GURAV VISHWAMBAR SUNIL	21	24	40	85
2410	HANKARE PARUSHURAM ANIL	26	26	40	92
2411	JADHAV SHREYASH RAJESH	25	29	40	94
2412	JADHAV SURAJ DILIP	25	28	40	93
2413	JADHAV SWETA SHSHIKANT	21	26	40	87
2414	JADHAV TEJASVINI SUDHAKAR	21	25	40	86
2415	JAGTAP VAISHANAVI SANJAY	21	22	40	83
2416	JAMBHALE SANSKRUTI SUBHASH	20	22	40	82
2417	KARAPE DHANSHRI MAHADEV	24	22	40	86

2418	LOHAR VISHAL BHAGWAT	19	25	40	84
2419	MALAVE PRANALI VAMAN	21	26	40	87
2420	MANE KALYANI DHANAJI	21	18	40	79
2421	NALAWADE PRATIKSHA RAJENDRA	23	20	40	83
2422	PATIL MAYURESHWAR HANMANT	21	25	40	86
2423	POL RUTUJA SUBHASH	22	21	40	83
2424	SALUNKHE PRANITA SANJAY	19	22	40	81
2425	SALUNKHE PRATHMESH VAMAN	25	23	40	88
2426	SAPKAL SANIKA DHANAJI	25	24	40	89
2427	SAPKAL SUPRIYA SANJAY	23	20	40	83
2428	SHEWALE PRYANKA KASHINATH	25	23	40	81



  
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**Yashwantrao Chavan College of Science, Karad**

**Department of Chemistry &**

**B.Sc. II Biochemistry**

**Short term Course - Chromatographic Technique in Biochemistry (2021-2022)**

**CO attainment**

Average Attainment	Target Attainment level	Remark
3	Level 5	Target achieved

Course code	Course Title	% of students above 60 % of Final exam marks	Level of attainment Final exam	80% of attainment Level in Final exam (I)	% of students above 80 % of mid-course exam marks	Level of attainment	20% of attainment Level in mid-course exam (II)	Attainment of course (I+ II)
Short term	Chromatographic Technique in Biochemistry	95.00	3	2.4	75.00	3	0.6	3

By using below attainment levels 1,2,3 for the Percent of students in B	
For internal exam	
Level 1	Less than 60% of student scoring more than average marks
Level 2	60%-80% of student scoring more than average marks
Level 3	more than equal to 80% of student scoring more than average marks



Programme outcome level	Target Attainment
Level 1	0.5-1.0
Level 2	1.0-1.5
Level 3	1.5-2.0
Level 4	2.0-2.5
Level 5	2.5-3.0

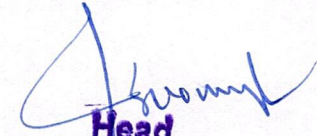
*[Signature]*  
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**YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD****Department of Chemistry****B.Sc. II Biochemistry****Short Term Course****"Certificate Course in Chromatographic techniques in Biochemistry"****Year 2021 – 2022**

Sr. No.	Criteria	Excellent	Good	Average	Poor
1.	Curriculum Content	10	13		
2.	Gratification about Lecture	13	10		
3.	Gratification about Practical	10	13		
4.	Hands on Training	12	11		
5.	Knowledge get from the course	11	12		
6.	The course if beneficial for Students and Parents	10	13		



  
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# YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD

## Department of Chemistry &

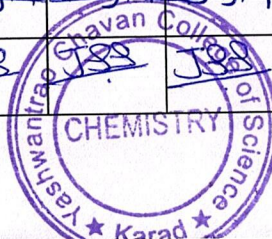
### B.Sc. II Biochemistry

#### Short Term Course - "Chromatographic techniques in Biochemistry"

Year 2021-22

Attendance Dec-2021

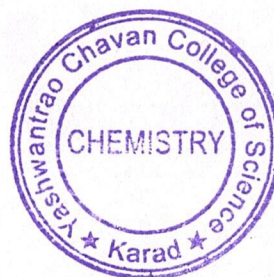
Roll. No.	Name of Student	4/12/21	5/12/21	11/12/21	12/12/21	17/12/21	18/12/21	25/12/21	27/12/21	28/12/21
2406	BADEKAR SHUBHAM PRASHANT	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar
2407	CHAUGHULE ARIYAN RAJKUMAR	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE	ARCHAUGHULE
2408	DHEB RUPALI NATHURAM	R.N.D.	R.N.D.	R.N.D.	R.N.D.	R.N.D.	R.N.D.	R.N.D.	R.N.D.	R.N.D.
2409	GURAV VISHWAMBAR SUNIL	VS.	VS.	VS.	VS.	VS.	VS.	VS.	VS.	VS.
2410	HANKARE PARUSHURAM ANIL	PAH.	PAH.	PAH.	PAH.	PAH.	PAH.	PAH.	PAH.	PAH.
2411	JADHAV SHREYASH RAJESH	SRJadhav	SRJadhav	SRJadhav	SRJadhav	SRJadhav	SRJadhav	SRJadhav	SRJadhav	SRJadhav
2412	JADHAV SURAJ DILIP	SDJadhav	SDJadhav	SDJadhav	SDJadhav	SDJadhav	SDJadhav	SDJadhav	SDJadhav	SDJadhav
2413	JADHAV SWETA SHSHIKANT	BSI.	BSI.	BSI.	BSI.	BSI.	BSI.	BSI.	BSI.	BSI.
2414	JADHAV TEJASVINI SUDHAKAR	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav	T.S.Jadhav
2415	JAGTAP VAISHANAVI SANJAY	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap
2416	JAMBHALE SANSKRUTI SUBHASH	JSS	JSS	JSS	JSS	JSS	JSS	JSS	JSS	JSS

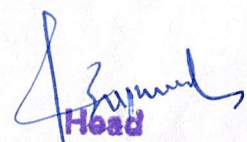


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Yashwantrao Chavan College of  
Science, Karad



2417	KARAPE DHANSHRI MAHADEV	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>
2418	LOHAR VISHAL BHAGWAT	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>
2419	MALAVE PRANALI VAMAN	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>
2420	MANE KALYANI DHANAJI	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>	<u>Kmese</u>
2421	NALAWADE PRATIKSHA RAJENDRA	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>	<u>Rajesh</u>
2422	PATIL MAYURESHWAR HANMANT	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>
2423	POL RUTUJA SUBHASH	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>
2424	SALUNKHE PRANITA SANJAY	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>
2425	SALUNKHE PRATHMESH VAMAN	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>	<u>P.V.S</u>
2426	SAPKAL SANIKA DHANAJI	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>	<u>Sspkal</u>
2427	SAPKAL SUPRIYA SANJAY	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>
2428	SHEWALE PRYANKA KASHINATH	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>



  
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# YASHWANTRAO CHAVAV COLLEGE OF SCIENCE, KARAD

## Department of Chemistry

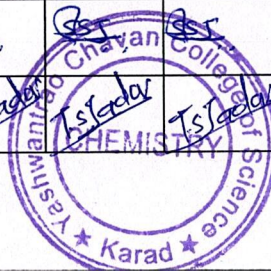
### B.Sc. II Biochemistry

#### Short Term Course - "Chromatographic techniques in Biochemistry"

Year 2021-22

Attendance Jan-2022

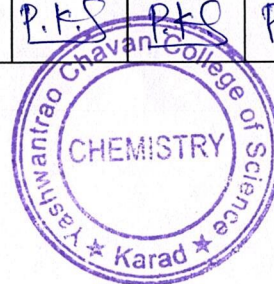
Roll. No.	Name of Student	3/1/22	4/1/22	10/1/22	11/1/22	17/1/22	18/1/22	24/1/22	27/1/22	31/1/22
2406	BADEKAR SHUBHAM PRASHANT	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar
2407	CHAUGHULE ARIYAN RAJKUMAR	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau
2408	DHEB RUPALI NATHURAM	R.N.D	R.N.D	R.N.D	R.N.D	R.N.D	R.N.D	R.N.D	R.N.D	R.N.D
2409	GURAV VISHWAMBAR SUNIL	VS	VS	VS	VS	VS	VS	VS	VS	VS
2410	HANKARE PARUSHURAM ANIL	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN
2411	JADHAV SHREYASH RAJESH	SRTadhar	SRTadhar	SRTadhar	SRTadhar	SRTadhar	SRTadhar	SRTadhar	SRTadhar	SRTadhar
2412	JADHAV SURAJ DILIP	SDTadhar	SDTadhar	SDTadhar	SDTadhar	SDTadhar	SDTadhar	SDTadhar	SDTadhar	SDTadhar
2413	JADHAV SWETA SHSHIKANT	SSI	SSI	SSI	SSI	SSI	SSI	SSI	SSI	SSI
2414	JADHAV TEJASVINI SUDHAKAR	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar	T.S.Tadhar



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2415	JAGTAP VAISHANAVI SANJAY	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>	<u>VJagtap</u>
2416	JAMBHALE SANSKRUTI SUBHASH	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>
2417	KARAPE DHANSHRI MAHADEV	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>K-DM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>
2418	LOHAR VISHAL BHAGWAT	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>	<u>Vishal</u>
2419	MALAVE PRANALI VAMAN	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>
2420	MANE KALYANI DHANAJI	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>
2421	NALAWADE PRATIKSHA RAJENDRA	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>	<u>Pnave</u>
2422	PATIL MAYURESHWAR HANMANT	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>
2423	POL RUTUJA SUBHASH	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>
2424	SALUNKHE PRANITA SANJAY	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>	<u>Seel</u>
2425	SALUNKHE PRATHMESH VAMAN	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>
2426	SAPKAL SANIKA DHANAJI	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>	<u>S.Sapk</u>
2427	SAPKAL SUPRIYA SANJAY	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>
2428	SHEWALE PRYANKA KASHINATH	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>	<u>P.KS</u>



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Department of Chemistry  
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Science, Karad



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## Department of Chemistry

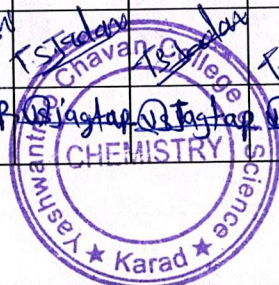
### B.Sc. II Biochemistry

#### Short Term Course - "Chromatographic techniques in Biochemistry"

Year 2021-22

Attendance Feb-2022

Roll. No.	Name of Student	7/2/22	8/2/22	14/2/22	15/2/22	21/2/22	22/2/22	28/2/22	29/2/22	02/3/22
2406	BADEKAR SHUBHAM PRASHANT	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar	SPBadekar
2407	CHAUGHULE ARIYAN RAJKUMAR	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau	ARChau
2408	DHEB RUPALI NATHURAM	RND	RND	RND	RND	RND	RND	RND	RND	RND
2409	GURAV VISHWAMBAR SUNIL	GS	GS	GS	GS	GS	GS	GS	GS	GS
2410	HANKARE PARUSHURAM ANIL	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN
2411	JADHAV SHREYASH RAJESH	SRTadhav	SRTadhav	SRTadhav	SRTadhav	SRTadhav	SRTadhav	SRTadhav	SRTadhav	SRTadhav
2412	JADHAV SURAJ DILIP	SDTadhav	SDTadhav	SDTadhav	SDTadhav	SDTadhav	SDTadhav	SDTadhav	SDTadhav	SDTadhav
2413	JADHAV SWETA SHSHIKANT	SS	SS	SS	SS	SS	SS	SS	SS	SS
2414	JADHAV TEJASVINI SUDHAKAR	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav	T.S.Jadav
2415	JAGTAP VAISHANAVI SANJAY	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap	VSJagtap

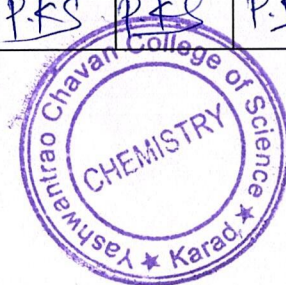


Department of Chemistry  
Yashwantrao Chavan College of  
Science, Karad



2416	JAMBHALE SANSKRUTI SUBHASH	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>	<u>JSS</u>
2417	KARAPE DHANSHRI MAHADEV	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>	<u>KDM</u>
2418	LOHAR VISHAL BHAGWAT	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>	<u>vishal</u>
2419	MALAVE PRANALI VAMAN	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>	<u>RM</u>
2420	MANE KALYANI DHANAJI	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>	<u>Kmane</u>
2421	NALAWADE PRATIKSHA RAJENDRA	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>	<u>Pranel</u>
2422	PATIL MAYURESHWAR HANMANT	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>	<u>MPatil</u>
2423	POL RUTUJA SUBHASH	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>	<u>Rutuja</u>
2424	SALUNKHE PRANITA SANJAY	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>	<u>See</u>
2425	SALUNKHE PRATHMESH VAMAN	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>	<u>P.VS</u>
2426	SAPKAL SANIKA DHANAJI	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>	<u>S.spkal</u>
2427	SAPKAL SUPRIYA SANJAY	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>	<u>Supriya</u>
2428	SHEWALE PRYANKA KASHINATH	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>	<u>P.K.S</u>

25



Head  
Department of Chemistry  
Yashwantrao Chavan College of  
Science, Karad



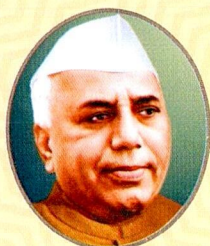
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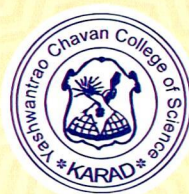
|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad  
Board for Higher Education's, Vidyanagar Karad's

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## Short Term Course CERTIFICATE of Completion

This is to certify that Mr./Miss. Mane Kalyani Dhanaji  
of Class B.Sc. II Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic  
techniques in Biochemistry" conducted by the department of  
Chemistry during the academic year 20 21 - 20 22

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal



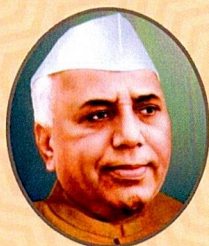
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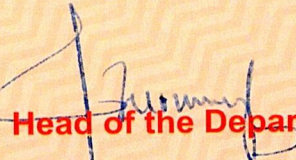
- Vidyanagar, Karad - 415 124.
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## Short Term Course CERTIFICATE OF COMPLETION

This is to certify that Mr./Miss. Pol Rutuja Subhash  
of Class B.Sc. II. Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic  
techniques in chromatography Biochemistry" conducted by the department of  
Chemistry during the academic year 2021 - 2022

  
Course Co-ordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal



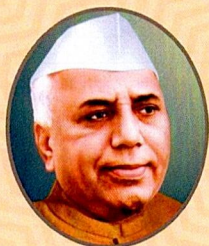
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## Short Term Course CERTIFICATE of COMPLETION

This is to certify that Mr./Miss. Gurav Vishwambhar Sunil  
of Class B.Sc. II Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic  
techniques in Biochemistry". conducted by the department of  
Chemistry during the academic year 2021 - 2022

  
Course Coordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal



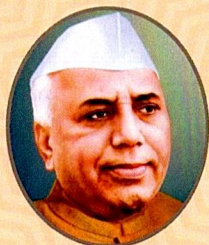
Estd.:

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## Short Term Course CERTIFICATE of COMPLETION

This is to certify that Mr./Miss. Jagtap Vaishnavi Sanjay  
of Class B-SC. II. Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic  
techniques in Biochemistry" conducted by the department of  
Chemistry during the academic year 2021 - 2022

  
Course Co-ordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal



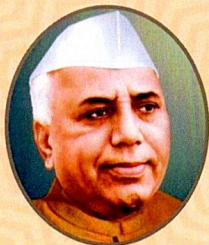
Estd.:

1958

|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad  
Board for Higher Education's, Vidyanagar Karad's

# Yashwantrao Chavan College of Science, Karad



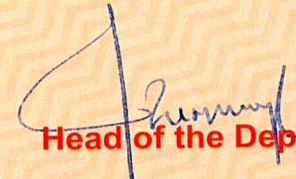
- Vidyanagar, Karad - 415 124.
- Reaccredited B++ Level by NAAC, Bangalore.
- An ISO 9001 : 2015 Certified College



## Short Term Course CERTIFICATE of COMPLETION

This is to certify that Mr./Miss. Sapkal Sanika Dhanaji  
of Class B.Sc. II Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic techniques in Biochemistry" conducted by the department of Chemistry during the academic year 2021 - 2022

  
Course Co-ordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal



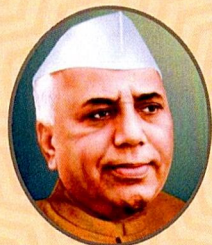
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## Short Term Course CERTIFICATE of Completion

This is to certify that Mr./Miss. Sapkal Supriya Sanjay  
of Class B.Sc. II. Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic techniques in Biochemistry" conducted by the department of Chemistry during the academic year 2021 - 2022

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal



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Board for Higher Education's, Vidyanagar Karad's




# Short Term Course


## CERTIFICATE of Completion

This is to certify that Mr./Miss. Salunkhe Prathmesh Vaman  
of Class BSc. II Biochemistry has Completed Short Term Course (3 Months) in "Chromatogra-  
phic techniques in Biochemistry". \_\_\_\_\_ conducted by the department of  
\_\_\_\_\_ during the academic year 2021 - 2022

  
Course Co-ordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal



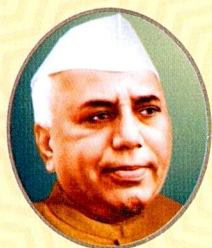
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# Yashwantrao Chavan College of Science, Karad



- Vidyanagar, Karad - 415 124.
- Reaccredited B<sup>++</sup> Level by NAAC, Bangalore.
- An ISO 9001 : 2015 Certified College



## Short Term Course CERTIFICATE of Completion

This is to certify that Mr./Miss. Jadhav Shreyash Rajesh  
of Class B.Sc II - Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic techniques in Biochemistry".  
Chemistry conducted by the department of  
Chemistry during the academic year 2021 - 2022

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal



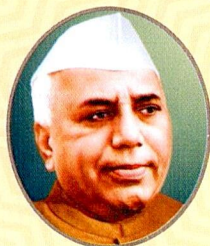
Estd.:

1958

|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad  
Board for Higher Education's, Vidyanagar Karad's

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## Short Term Course CERTIFICATE of Completion

This is to certify that Mr./Miss. Karape Dhanshri Mahadev  
of Class B.Sc. II - Biochemistry has Completed Short Term Course (3 Months) in "Chromatographic  
techniques in Biochemistry" conducted by the department of  
Chemistry during the academic year 2021 - 2022

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal



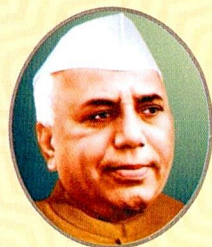
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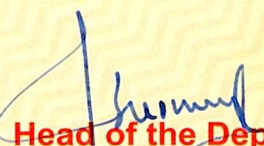
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## Short Term Course CERTIFICATE of Completion

This is to certify that *Mr./Miss. Shewale Priyanka Kashinath*  
of Class *B.Sc. II Biochemistry* has Completed Short Term Course (3 Months) in *"Chromatographic  
Techniques in Biochemistry"*.  
*Chemistry* conducted by the department of  
during the academic year *20 21 - 20 22*

  
Course Co-ordinator

  
Head of the Department

  
IQAC Co-ordinator

  
Principal