



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

15/5/2021

**NOTICE**  
**VALUE ADDED COURSE**  
**INSTRUMENTATION AND TECHNIQUES IN**  
**BIOLOGICAL SCIENCES**  
**COURSE CODE: RJBOTC16**

A value added course entitled "Instrumentation and Techniques in Biological Science" course code RJBOTC16 is being offered to students. This course will be of 30 hours duration and those students who successfully complete will be getting two credits. The course shall commence from 18<sup>th</sup> May and will be completed on 30<sup>th</sup> May, 2021. Course would be conducted online on Zoom platform. Attendance for all sessions is compulsory only those students who succeed in the evaluation would be given certificates and shall get two credits. Enrolment is compulsory for the course. All further communications would be on the whatsapp group created for enrolled students.

HOD Botany and Principal



PRINCIPAL

RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)



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## Course Schedule

### INSTRUMENTATION AND TECHNIQUES IN BIOLOGICAL SCIENCES ( RJBOTC16)

SR. NO.	DATE & DAY	SESSION – I 02.00 – 03.00 PM	SESSION – II 03.00 – 04.00 PM	EXTRA SESSION 04.00 – 04.30 PM
1.	18/05/2021 TUESDAY	WELCOME AND INTRODUCTION	MICROMETRY D.B.SINGH	CONTD WITH LECTURE
2.	19/05/2021 WEDNESDAY	MICROMETRY D.B.	ELECTROPHORESIS N.J.	CONTD WITH LECTURE
3.	20/05/2021 THURSDAY	ELECTROPHORESIS N.J.	MICROMETRY D.B.	C. EVALUATION-1 (MCQs)
4.	21/05/2021 FRIDAY	MICROMETRY D.B.	ELECTROPHORESIS N.J.	CONTD WITH LECTURE
5.	22/05/2021 SATURDAY	ELECTROPHORESIS N.J.	MICROMETRY D.B.	EVALUATION-2 (ASSIGNMENT)
6.	23/05/2021 SUNDAY	C. CHROMATOGRAPHY P.N.	ELECTROPHORESIS N.J.	CONTD WITH LECTURE
7.	24/05/2021 MONDAY	ELECTROPHORESIS A.P.	C. CHROMATOGRAPHY P.N.	CONTD WITH LECTURE
8.	25/05/2021 TUESDAY	ELECTROPHORESIS A.P.	C. CHROMATOGRAPHY P.N.	C. EVALUATION-3 (MCQs)
9.	26/05/2021 WEDNESDAY	C. CHROMATOGRAPHY P.N./ R.J	ELECTROPHORESIS/ CAMERA LUCIDA A.P./ D.B.	NA
10.	27/05/2021 THURSDAY	CAMERA LUCIDA D.B.	C. CHROMATOGRAPHY R.J.	NA
11.	28/05/2021 FRIDAY	CAMERA LUCIDA D.B.	C. CHROMATOGRAPHY R.J.	EVALUATION-4 (ASSIGNMENT)
12.	29/05/2021 SATURDAY	CAMERA LUCIDA D.B.	C. CHROMATOGRAPHY/ DISCUSSION R.J.	NA
13.	30/05/2021 SUNDAY	<b>FINAL EVALUATION</b> MCQ; VIVA-VOCE , ROUGH JOURNAL AND REPORT		

HOD BOTANY AND PRINCIPAL



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## REPORT ON VALUE ADDED COURSE- INSTRUMENTATION AND TECHNIQUES IN BIOLOGICAL SCIENCES (RJBOTC16)

A Value Added Course on 'Instrumentation and Techniques in Biological Sciences' was conducted online between 18<sup>th</sup> to 30<sup>th</sup> May, 2020.

Around 47 students registered for the same through the Google form registration link.

The course covered 4 instruments- Micrometry, Camera Lucida, Column Chromatography and Electrophoresis. The resource persons were totally In-house-

Capt. Pravin Nayak- Column Chromatography

Dr. Dan Bahadur Singh- Micrometry and Camera Lucida

Ms. Ruchira Javkar- Column Chromatography

Ms. Aishwarya Parab- Electrophoresis

Ms. Namrata Jaiswal- Electrophoresis

The entire course was conducted for 30 hours. Daily there were two sessions of 1 hour each, each being taken by one resource person, followed by a third session of 30 minutes. Two instruments were conducted in parallel. The students were evaluated for a total of 100 marks - Two evaluative tests of 10 marks each, 2 Assignments of 10 marks each, a final evaluative test of 50 marks based on the entire portion, 5 marks for maintaining the rough journal and report writing and 5 marks for Viva Voce.

The course started with parallel lectures on Micrometry and Electrophoresis. Once completed, the course continued with parallel sessions on Electrophoresis and Camera Lucida. Reading material in terms of ppt and YouTube video links was provided to the registered students. During the course two MCQ based evaluative tests were conducted for 10 marks each. The first evaluative test was based on Micrometry and Electrophoresis-I. The second evaluative test was based on Micrometry, Electrophoresis and Chromatography. Two Assignment based evaluative of 10 marks were also given. On the final day, a MCQ based evaluative test followed by proctored viva, rough journal and report submission was conducted.



  
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AY 2020 Onwards

# Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE (AUTONOMOUS)

(Also known as R. J. College of Arts, Science & Commerce as per UGC Notification)

Affiliated to UNIVERSITY OF MUMBAI II Recognized by UGC under 2f & 12B  
NAAC Accredited 'A GRADE' with CGPA 3.50

## Knowledge is all Ambrosia

**CERTIFICATE  
COURSE IN**

**INSTRUMENTATION  
AND  
TECHNIQUES  
IN  
BIOLOGICAL  
SCIENCES**

A

T



M



C



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# ABOUT US

Hindi Vidya Prachar Samiti was incepted on the auspicious day of Shri Krishna Janmashtami, 15th August 1938. A brain child of a visionary Late Shri Nandkishore Singh Jairamji, samiti was established with the objectives of catering to the educational needs of the Hindi speaking community. Ramniranjan Jhunjhunwala College came into existence in 1963, enabling a larger section of the society to take advantage of the facilities provided for higher education.

From 1999-2000 the College has added a number of self-financing courses like B.M.S., B.B.I., B.Sc. in Computer Science, Information Technology, Biotechnology, M.Sc. in Computer Science, Biotechnology and Information Technology as well as add on courses, which further hone the special skills of the students.

The college has been reaccredited with 'A' Grade by NAAC in 2014 with a CGPA 3.50 and received the Best College Award (2007-2008) of the University of Mumbai. The College has been bestowed with IMC "Ramkrishna Bajaj Performance Excellence Trophy", 2010.

The Principal of the college was awarded "Best Teacher" by Government of Maharashtra in 2011.

Government of Maharashtra conferred the college with "JAAGAR JAANIVANCHA" (First in Mumbai Suburban- in 2013 and Second in Mumbai Suburban- in 2014) for safety of girls.

**C**ourse Code: **RJBOTC16**

**D**uration: **30** hours

**C**redits : **02**

# LEARNING OUTCOME

After completion of the course, the students will be able to-

- Handle the mentioned laboratory instrument very efficiently.
- Better understand the principle on which these instruments are working.
- Skillfully use the instruments.
- Manage and Maintain the instruments before and after its use in an experiment.
- Understand the applications and importance of these instruments in biological studies.





# COURSE CONTENT

Unit I  
CAMERA LUCIDA : History, description, principle ,  
types, working and applications.

Unit II  
ELECTROPHORESIS : Types, principle of separation,  
Components of an electrophoretic kit, types of matrix,  
Technique of loading of sample, Micropipettes, types  
of buffer used and composition, working, staining,  
visualisation, Rf, applications. Extension – blotting  
techniques and significances

Unit III  
COLUMN CHROMATOGRAPHY : Principle, working,  
Types in general, phases – stationary and mobile,  
Matrix used, Rt, precautions, applications.

Unit IV  
MICROMETRY : Stage and Ocular micrometer,  
Principle, Calibration, use and measurement,  
applications in biological studies.

## ASSESSMENT

CONTINUOUS EVALUATION, THEORY AND PRACTICALS (VIRTUAL OR IN  
LAB), REPORT WRITING, WRITING FOR SCIENCE MAGAZINE, VIVA-VOCE,  
VIDEO ASSIGNMENTS WITH EVALUATION BASED ON THE VIDEO



## MEDIUM OF INSTRUCTION

English

## 100 MARKS



## PASSING 40

# WHO SHOULD DO IT?

Pursuing B.Sc or Completed B.Sc in any branch of Biological Science



Hindi Vidya Prachar Samiti's

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## *Certificate of Completion*

This is to certify that

*Vaishnavi Shantesh Megha Amin*

of Class **S.Y.B.Sc** Roll No. **501**

has successfully completed the **Value-Added Course** in **Instrumentation and Techniques in Biological Sciences**  
organized by Department of **BOTANY** and conducted from **18 May, 2021 to 29 May, 2021.**

**COURSE CODE**  
**LJBOTC16**

Issue Date: 13 July, 2021



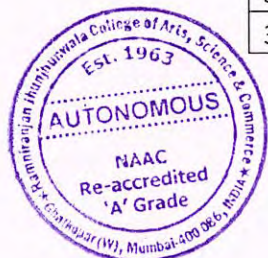
  
Dr. Himanshu Dawda  
In-charge Principal

CERTIFICATE ID: RJC-VAC-202021-00041



**STUDENT COMPLETED Certificate course in  
Instrumentation and Techniques in Biological  
Sciences YEAR 20-21**

SR NO	NAME	ROLL NO	CLASS
1	Vaishnavi Shailesh Megha Amin	501	SYBSc
2	Farnaaz Shoeb Shabnam Ansari	502	SYBSc
3	Afreenbanu Nizamuddin Shahida Choudhary	506	SYBSc
4	Krishna Bhagaram Mamta Choudhary	507	SYBSc
5	Mariam Ayub Parveen Chougule	508	SYBSc
6	Vaishnavi Dhondi Surekha Gawade	509	SYBSc
7	Pratiksha Udaykant Nisha Gawde	510	SYBSc
8	Nandani Govind Saroj devi Gupta	512	SYBSc
9	Afreen Abdul kadir Sitara bano Khan	515	SYBSc
10	Shabnam Nisar Ahmed Shakira Khan	518	SYBSc
11	Vinayak Suresh Supriya Manchekar	520	SYBSc
12	Vidya Kishor Sojar More	523	SYBSc
13	Siddhi Vilas Varsha Pawar	527	SYBSc
14	Pranjal Ramendra p Paro Yadav	530	SYBSc
15	AFSANA HAQIULLAH ZAIBUNNISA REHMANI	532	SYBSc
16	Saylee Krishna Vaishali Kondekar	533	SYBSc
17	Sana Mohammad Hasan Amina Shaikh	536	SYBSc
18	Gulam yazdani Izhar Ahmed Nazma sugra Siddiqui	538	SYBSc
19	Sadiya Sogra Ijhar Ahmed Najma Sogra Siddiqui	540	SYBSc
20	Madhulika Manikraj Prema Singh	541	SYBSc
21	Maitreyee Umesh Rita Singh	542	SYBSc
22	Priyanka Surendrapratap Anjana Singh	543	SYBSc
23	Rubi devi Saheblal Nishadevi Vishwakarma	549	SYBSc
24	Sneha Ramesh Rekha Vishwakarma	551	SYBSc
25	Ravina pal Subhash pal Pramila pal Pal	562	SYBSc
26	Rukhsana Khaton Mohammed Ashraf Ummat Shaikh	564	SYBSc
27	Reetesh Akhilesh Binita Chaturvedi	702	SYBSc
28	Lavesh Rajendra Rajeshree Dalvi	705	SYBSc
29	Jyoti Rajesh Gomati Devi Gound	708	SYBSc
30	Komal Rajkumar Ashadevi Gupta	709	SYBSc
31	Kusum Santlal Indravati Gupta	710	SYBSc
32	Khan Asma Gulam mustafa Zahida khaton Khan	717	SYBSc
33	Uzma Abdulhalim Umme kulsum Khan	720	SYBSc
34	Muskan Muqem Shama Shaikh	727	SYBSc
35	Sejal Nilesh Singh Kumkum Singh Singh	733	SYBSc
36	Pooja Shrikant Nirmala Singh	746	SYBSc



  
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