



**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**



**S**



**M**



**C**

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Mumbai 400 086, Maharashtra, INDIA.



# 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