AY 2021 Onwards

NAAC Re-Accredited 'A' Grade
ESTD. 1963
RJC
ISO 9001:2015
Best College
UNIVERSITY OF MUMBAI

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

A T S M C

CERTIFICATE COURSE IN

CERTIFICATE COURSE IN LABORATORY SAFETY & BASIC IT SKILLS FOR CHEMISTS

www.rjcollege.edu.in

rjcollege@rjcollege.edu.in

+91 22 25151763

Opposite Railway Station, Ghatkopar (W),
Mumbai 400 086, Maharashtra, INDIA.

CERTIFICATE COURSE IN | LABORATORY SAFETY & BASIC IT SKILLS FOR CHEMISTS

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.

Course Code: RJCHEC01

Duration: 30 hours

Credits : 02

LEARNING OUTCOME

On completion of the course the students will be able to

- Practice safety rules while performing experiments in the lab.
- Develop good laboratory practices.
- Confidently handle various chemicals used in a general chemistry lab.
- Perform first-aid treatment in case of common injuries/accidents in the lab.
- Apply IT tools to process the raw experimental data and make conclusions.
- Write a project report and also give a presentation on it.

COURSE CONTENT

Unit I	**Safety in laboratory & Green Chemistry:** • Laboratory safety rules: General guidelines, general precautions, personal protective equipments, apparel in the lab, conduct and hygiene practices in the lab, housekeeping, chemical safety rules, fire and electrical safety rules; common chemistry laboratory practices; safety and hazard symbols; how to deal with accidents; DON'Ts in the lab. • Material Safety Data Sheet (MSDS): What is MSDS? MSDS of frequently used laboratory chemicals; • Lab waste management and disposal. • Green Chemistry: Definition, brief introduction of twelve principles of Green Chemistry with examples (special emphasis on atom economy, reducing toxicity and green solvents); CO_2: an alternative solvent.
Unit II	**IT Skills for Chemists: Introductory writing activities:** • Introduction to word processor and structure drawing (ChemSketch, ChemDraw) softwares. Incorporating chemical structures, chemical equations, expressions from chemistry (e.g. Maxwell-Boltzmann distribution law, Bragg's law, van der Waals equation, integrated rate expressions, BET isotherm, etc.) into word processing documents. • Handling numeric data: Spreadsheet software (Excel), creating a spreadsheet, entering and formatting information, basic functions and formulae, creating charts, tables and graphs. Incorporating tables and graphs into word processing documents. Simple calculations and plotting graphs using a spreadsheet. • Numeric modelling: Numerical curve fitting, linear regression (rate constants from concentration-time data, molar extinction coefficients from absorbance data), numerical differentiation (e.g. handling data from potentiometric and pH-metric titrations, p^{Ka} of weak acid), integration (e.g. entropy/enthalpy change from heat capacity data). • PowerPoint presentation and general introduction to project report writing.

English

MEDIUM OF INSTRUCTION

EVALUATION

Assignments & MCQ test

PASSING 40

100 MARKS

T.Y.B.Sc Chemistry Students

WHO SHOULD DO IT?