



AY 2021 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

**POSTGRADUATE
DIPLOMA IN**

**INDUSTRIAL
SAFETY AND
HYGIENE**

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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.

Course Code: **RJSPGDISH001**

Duration: **1 Year**

Credits : **48**

PREAMBLE

Industrial Safety and Hygiene is the discipline of evaluating, controlling, and preventing workplace hazards to protect the physical and mental health of workers. This includes general safety concerns and specific concerns relevant to the industry.

Industrial Hygiene is the prevention and control of hazards at the workplace. Industrial Hygienists use scientific methodology to monitor work environment, identify potential hazards and evaluate the level of hazards and to prevent or minimize these hazards. Industrial safety refers to the policies and plans that organizations that meet the challenges identified by industrial hygienists. This course emphasizes the job responsibilities of an Industrial hygienist, elaborates different workplace hazards, and discusses measures to control these hazards. The course is designed to develop skills and competences required for Industrial safety management.



OBJECTIVE

This course is based on systematic teaching, learning and evaluation techniques. Quality based training and comprehensive coaching provided by experts from industries would fulfil following objectives:

- To develop skilled and competent human resources to manage complex industrial environment.
- To distinguish chemical, physical, biological and ergonomic hazards.
- To identify and evaluate different types of hazards and to learn hazard evaluation techniques.
- To learn strategies to prevent, minimize and control hazards.
- To monitor work environment and exposure to hazards.
- To understand Industrial safety standards and regulations.

PREAMBLE

PAPER	TITLE OF PAPER	MAXIMUM MARKS	MINIMUM MARKS	Credits	COURSE CODE
I	Introduction to Industrial Safety and Hygiene	100	50	8 Credits	RJSPGDISH001
II	Industrial Toxicology	100	50	8 Credits	RJSPGDISH002
III	Industrial Hazards and their management	100	50	8 Credits	RJSPGDISH003
IV	Accident prevention techniques	100	50	8 Credits	RJSPGDISH004
V	Safety Management Plan	100	50	8 Credits	RJSPGDISH005
VI	Industrial Safety Standards, Regulation and Laws	100	50	8 Credits	RJSPGDISH006
	TOTAL	600	300	48 Credits	

(All papers include theory, viva, project, and case studies)

Paper 1: Introduction to Industrial Safety and Hygiene

8 Credits

UNIT- 1: Overview of Industrial Safety and Hygiene, Ergonomics – Introduction to Industrial Safety and Hygiene, Careers in Industrial Safety and Hygiene,

UNIT- 2: Industrial Hygiene and Occupational Health Hazards - workplace hazards, physical and mechanical hazards

UNIT- 3: Industrial Safety and Hygiene Standards – overview and historical development,

UNIT- 4: Industrial Hazards, assessment of health risks, general approach to control health risks,

Paper 2: Industrial Toxicology

8 Credits

UNIT- 1: Physiology/Anatomy, Occupational Toxicology – Toxicology fundamentals, Biological hazards, chemical and material hazards, physical hazards, psychological hazards

UNIT- 2: Air pollutants in industries – Gases, vapors, solvents and particulate matters, carcinogens

UNIT- 3: Health hazards and their sources of exposure – Disorders of lungs, skin, ear and eyes, Permissible exposure limits

UNIT- 4: Industrial Hygiene and Health - Industrial hygiene principles, Role of Industrial hygienist and Toxicologist

Paper 3: Industrial Hazards and their management

8 Credits

UNIT- 1: Biological hazards, radioactive and non-radioactive hazards, waste management

UNIT- 2: Electrical Hazard – types, prevention, safe work practices

UNIT- 3: Fire Hazards and measures to prevent fire hazards

UNIT- 4: Effect of Vibration, Noise, Thermal environment, and Radiations

Paper 4: Accident prevention techniques

8 Credits

UNIT- 1: Principles of accidents prevention - Overview of Material Handling Systems & related Safety Procedures, Handling, Disposal and Recycling Practices of Hazardous Materials

UNIT- 2: Theories of Accident causation – factors, elements, and investigation of accidents

UNIT- 3: Safety of operations – Basics of machine safeguarding, types of hazardous mechanical motions and actions

UNIT- 4: Protective clothing, Personal Protective Equipment, First Aid

Paper 5: Safety Management Plan

8 Credits

UNIT- 1: Importance of Industrial safety, Safety of environment, Basics of preventive techniques

UNIT- 2: Safe use of machines and tools - Safety Best Practices in Industrial Hygiene testing

UNIT- 3: Introduction to Electrical Safety, Industrial lighting

UNIT- 4: Plant design and housekeeping - Overview of Fire Protection, Requirements in a Plant, Summary of 5S Methodology, Introduction to Lean Principles

Paper 6: Industrial Safety Standards, Regulation and Laws

8 Credits

UNIT- 1: Legislation in Industrial safety: Laws and Regulations - Safety Requirements as per The Factory Act – Bureau of Industrial standards on Safety and Health, National Policy on Safety, Health and Environment at Workplace (NPSHEW)

UNIT- 2: Environmental Protection Act, Environmental Impact Assessment (EIA) Preservation of natural resources

UNIT- 3: Occupational safety, health and environmental management – OSH India, Process Safety Management (PSM) ISO 9001, 14001 and 45001 Standards

UNIT- 4: Safety Management – Role, responsibilities, structure and functions of Safety committee, Safety education and training, Economic Analysis of Safety and Hygiene, Safety audit

List of Reference Books:

- 1) Industrial Hygiene Workbook, 6th Edition – Jeff Burton
- 2) The Occupational Environment: Its evaluation, Control and Management, 3rd Edition
- 3) Fundamentals of Industrial Hygiene, 5th Edition – Barbara. A. Plog, Petricia J. Quinlan
- 4) Safety Management – Grimaldi and Simons
- 5) Fundamentals of Industrial Safety and Health – Dr. K. U. Mistry
- 6) Industrial Hygiene and Chemical Safety – M. H. Fulekar



WHO SHOULD DO IT?

Any Bachelor's Degree in arts / Commerce / Science/three years
Diploma after XIIth std/ITI equivalent to three year degree program.

Eligibility

- Any Bachelor's Degree in Science/three years Diploma after XIIth std/ITI equivalent to three year degree program.

Duration of the Course

- One Year (Part- time) Blended teaching

Fee Structure

- Tution Fee - Rs. 25,000.00
- RFID - Rs. 150.00
- Examination Fees - Rs. 1000.00
- Application form Fees - Rs 150.00

Intake capacity

- 40 students

Faculty

- Drawn from Industry and Academia, proficient in areas of safety, toxicology, Environment management, health and hygiene

Medium of Instruction

- English

Field Visit

- Industries