

Diploma in Industrial Safety

JSS Academy of Higher Education and Research Mysuru - 570 015

I. About the Programme

1. Mission & Objectives

JSS AHER is culmination of half a century of perseverance in the field of education steered by philosophy of noble minds. The University was established in the Year 2008 and has been contributing towards quality healthcare and training professionals to meet the ever-increasing demand of qualified trained human resources in the healthcare sector. JSS AHER has created a vigorous and intellectually stimulating ambience conducive to learning and reflection. BSc in Environmental Science is a unique, interesting and leading course designed to encourage aspiring students with a cutting-edge training to innovate young minds power of thinking, cater them apt practical training and making them industry ready for a rewarding professional career.

The Industrial Safety Course is designed to provide comprehensive training and education to individuals working in industrial settings. The course aims to promote a culture of safety, prevent accidents and injuries, and equip participants with the knowledge and skills necessary to identify potential hazards, implement safety procedures, and comply with industrial safety regulations. Through the course, participants will gain an understanding of the importance of industrial safety and its role in creating a safe and healthy work environment. They will also learn about industrial safety regulations and compliance requirements, and develop the skills necessary to respond to emergency situations and prevent accidents and injuries. The Industrial Safety Course is suitable for individuals working in a variety of industrial settings, including manufacturing, construction, and transportation. It is designed for anyone who works with industrial equipment or machinery, hazardous materials, or in environments with potential safety risks.

The course is delivered through a combination of classroom instruction, practical training, and hands-on experience. Participants will learn from experienced safety professionals and will have access to the latest safety equipment and technology. By the end of the course, participants will have a comprehensive understanding of industrial safety principles and practices, and will be equipped with the knowledge and skills necessary to promote a culture of safety in their workplace. The core mission is to impart knowledge with quality teaching and research with a special focus on contemporary national needs. Our vision is to grow into an institution of national importance, with international standing and internationally recognized Centre of excellence and research in Environmental sciences.

2. Mission & Goals

To develop highly qualified professional manpower the basic requirement lies on systematic quality-based coaching and training in Advanced Science and Technologies Industrial Safety. Therefore, the course is designed to train and provide expert human resource to Industrial safety and expected to bring direct benefits to industry and health of the labours.

The course is based on following objectives:

1. To develop an expert manpower to handle the complex industrial environment.
2. To give knowledge about occupational health, industrial hygiene, accidental prevention techniques to the students.
3. To make the student aware about safety auditing and management systems, pollution prevention techniques etc.
4. To train the students about Industrial risk assessment and management.

3. Target Group of Learner

- Any Engineering Degree (B.E/B.Tech degree) recognized by AICTE with any specializations and they should be secured 55 % marks.
- Science Degree with Physics or chemistry recognized by UGC and should have secured 55 % marks in the graduation.
- Diploma in engineering from AICTE approved Institutions

4. Appropriateness of Course

This course is intended for professionals, practitioners, researchers and students from wide range of backgrounds who aim to develop their knowledge and insights pertaining to the environment management and safety. The course is designed to provide critical and practical skills to analyze, evaluate, design and implement solutions and strategies with regards to Industrial ecosystem and safety issues at industrial level. The prudent management of labour health and safety are high on the agenda of global concerns.

5. Instructional Design

- Curriculum Design:** The curriculum is designed by a committee comprising subject experts from the Department of Environmental Science, keeping in view the needs of the diverse groups of learners for industrial applications.

- Curriculum Design for Diploma in Industrial Safety.**

Paper Code	Semester I	University Examination			
		CIA	Theory/practical Exam	Max. Marks	Total Credits
IS-T1	Safety Management Systems	30	70	100	4
IS-T2	Safety Engineering	30	70	100	4
IS-T3	Fire, Explosion, Toxicity and Risk Assessment	30	70	100	4
IS-T4	Appraisal, Analysis, Inspection and Control Procedures	30	70	100	4
IS-P1	Industrial Training and Visits report and Viva			150+50	8
				600	24
	Semester II				
IS-T5	Standards and statutes	30	70	100	4
IS-T6	Industrial Hygiene and Occupational Health	30	70	100	4
IS-T7	Safety in Chemical Industries	30	70	100	4
IS-T8	Safety in Industries	30	70	100	4

IS-P2	Industrial Training and Visits report and Viva			150+50	8
				600	24
Total Credits					48
T- Theory, P-Practical/Project/Training/Internships, CIA- Continuous Internal Assessment					

The Semester Grade Point Average (SGPA) is measured as performance of work done by the student in a semester. The Cumulative Grade Point Average (CGPA) is measured as cumulative performance of a student in all semesters in the courses taken by the student. The mission of the Diploma in Industrial Safety at Department of Environmental Science is to promote Safe work space in the industries and can excel in risk assessment at Industries.

The main objective of the courses offered is interdisciplinary in nature that enables over all student development and enhanced learning experience. Each course paper provides hands-on- experience that translates theory to practical. The curriculum is supported with industrial visits, other extension, and extracurricular activities wherever required. The students are encouraged to undergo and acquire scientific knowledge by frequently participating in different subject related workshops, research centers and national/international laboratories, industries, firms, etc. with inter and multidisciplinary collaborative organization.

- c. **Detailed Syllabus:** As per the diploma course offered in the regular mode by JSS Academy of Higher Education and recommendation of Board of Studies.
- d. **Duration of the Program:** Minimum 1 (ONE) years. However, the learners are required to complete the course within 3 (THREE) years from the date of admission.
- e. **Instructional Delivery Mechanism:** The semester system introduced by JSSAHER shall be followed. The programme shall be delivered in 2 (TWO) semesters. The learners have to attend the classes and industrial visits to cover the syllabus. The progress of the learners shall be evaluated by Internal Assessment and Term end/semester end examination. Examination rules shall be as per the rules and regulation adopted by JSS AHER.
- f. **Media:** Print Media, ICT based content, content delivered through e-learning portal.

6. Procedure for Admissions, Curriculum transaction and Evaluation

- a. **Admission Procedure:** Centralized admission process will be conducted for Diploma in Industrial Safety Programme. Students can apply for this course online. Students are admitted through counseling (according to their marks) as per the availability of seats.
- b. **Eligibility:**
 - Degree in any branch of Technology / Engineering
 - Degree in Physics or Chemistry as a major Subject from recognized university/ institute
 - Diploma in Engineering will be considered only from State Board/Directorate/Council of Technical Education or AICTE approved institutes.

- B.E/B.Tech degree will be considered only from AICTE/UGC approved institutes or Universities.
- Industrial professionals one who working as field of Occupational safety and health and other related fields etc.

PROGRAMME REGULATIONS

I. Definitions

1. Program and Course:

- Program:** Diploma Program
- Course:** A theory or a practical or a project work or a combination of all as said above, studied in a semester.

2. Dean: The head of the Faculty nominated by the University among the Senior Faculty

3. Head of the Department: A recognized faculty of the respective department nominated by the Dean in consultation with the Vice Chancellor.

4. Programme coordinator: A recognized faculty of the respective programme

5. Faculty: A teaching member as per UGC requirements.

6. Mode of Delivery: Programme is a regular course and students have to attend the class regularly.

II. Program Study:

Curriculum: Every department has a prescribed course structure, which in general terms is known as Curriculum/Course of Study/Program. It prescribes courses to be studied in each semester. This includes all the curricula and course contents. The medium of the instruction, examination, seminar and project work should be in English.

- Credit System:** In general, a certain quantum of work measured in terms of credit is laid down as the requirement for a particular degree. The student acquires credits by passing courses every semester. There are mainly two types of courses: i) Laboratory courses consisting of theory and practical and ii) Non-laboratory courses consisting of only theory papers. The credit (C) for a course/paper is dependent on the number of hours of instruction per week in that program. Credits are assigned to practical training, seminar, workshop and projects also. The quanta of credits for such activities are stipulated by respective program committee of the department. It is mandatory that the HOD must seek the prior approval for the number of credits by the Board of Studies prior to the CBCS meeting.

2. Duration and Structure of the Program:

The minimum and maximum semesters for completion of a program are given below:

Structure and Duration of the Diploma in Industrial Safety programme

Semester	Core course (Theory)		Core course (Practical/field visits/Dissertation)		Total credit
	No of paper	Total Credit	No of paper	Total Credit	
I	4	16	Industrial training and Field visit ¹ viva voce examination*	8	24
II	4	16	Industrial training and Field visit ¹ viva voce examination*	8	24
	8	32		20	48
Total Credits					48

¹Field visits to industries for training related Industrial safety management or any field visits connected to courses may be organized by programme coordinator during class and field visit report should be submitted to programme coordinator as the prescribed format (Total: 8 credits- Visit and Participation: 4 credits; Report: 2 credits; Viva-voce: 2 credits).

Final reports of industrial visits and industrial training should be submitted to programme coordinator by the end of every semester as per the prescribed format. The reports may be evaluated by programme coordinator along with external examiner appointed by controller of examination through viva-voce examination.

Note: Each course has 70% credits of the main exam and 30% of continuous internal assessment (CIA), **Example:** 100 marks course has 70 marks for main exam and 30 marks for CIA which includes test, seminar and assignments.

III. Registration:

1. Registration Procedure: The student is requested to register for opted elective papers with the respective faculty, after due announcement of the prescribed dates and at the beginning/commencement of each semester. The programme coordinator/concerned faculty member will inform the students the list of electives courses available for the students for registration. The procedure is as follows:

- The registration of courses for the semester (s) other than the first semester shall be made at least one week prior to the end-semester examination of the previous semester.
- The details of the elective and the project shall be intimated to the students, two weeks prior to the date of registration.
- The registration form shall be filled in and signed by the student and the concerned teacher.
- A student may be granted permission to withdraw from a course earlier registered by him/her within two weeks (or in the event of absencing himself/herself for more than two weeks) from the date of commencement of the semester.
- A student who has withdrawn his/her registration for a specific course may register for that course again when the same course is offered by the concerned department, in subsequent semester.

2. Temporary withdrawal of registration:

A student may be permitted by the Dean of the faculty on the recommendation of the Head/Program Committee to temporarily withdraw from the program up to a maximum of two semesters for valid grounds.

III. Program Committee:

1. Every post graduate program shall have a Program Committee constituted by the Programme Coordinator in consultation with Head and all the Course Teachers of the corresponding program.
2. The composition of the Program Committee shall be as follows:
Head of Department; Programme Coordinator; Teacher of all courses of the corresponding program; Student Adviser and two student representatives of the program nominated by the Programme Coordinator.
3. Duties of the Program Committee:
 - I. Reviewing periodically the progress of the academic.
 - II. Discussing the problems concerning curricula, syllabi and conduct of contact classes.
 - III. Providing consultation of the Course Teachers on the nature and scope of assessment for the course, this shall be announced, to the students at the beginning of respective semesters.
 - IV. Communicating its recommendation to the Head/Dean on academic matters.
 - V. The Program Committee shall meet at least twice in a semester preferably at the before and end of each contact class programme.

IV. Attendance:

Only those students who have minimum of 75% attendance in theory and practical/Industrial and Field Visit shall be permitted to appear for end semester examination.

V. Examination:

A. Continuous Internal Assessment (CIA)

1. CIA may be in the form of a combination of tests, assignments, attendance and seminar.
2. Assessment is continuous in nature and for report purpose, assessment is carried out in 2 phases as CIA 1 and CIA 2
3. CIA shall be conducted during the classes or as decision taken by programme committee.
4. The assessment procedure to be followed for each course shall be approved by the program committee and announced to the students at the commencement of each semester by the programme coordinator in website and department notice board.
5. Such schedule for continuous assessment procedure/submission will be displayed on the notice board in the beginning of the semester.
6. The course teacher shall intimate the CIA marks of the candidates to programme committee and Head will send the internal assessment marks together with 75% attendance eligibility

secured by each candidate and forward to Controller of Examinations office. Based on this detail and CBCS regulations, the Controller of Examinations will issue hall ticket (admit cards) for end semester examination, through Head.

Details of continuous internal assessment (CIA) as follows

Examination	Assessment	% credit	Marks
Test	TWO test performance	60	20
Assignment	ONE submitted	20	05
Seminar	ONE presentation of a given topic	20	05

The respective course teacher will be assigned the question paper for the test, topic of the assignments and seminar. The respective course teacher only will conduct all tests on prior notice of programme coordinator.

B. End Semester Examination (ESE):

1. There shall be one end semester examination (ESE) of three hours duration on each lecture based course.
2. For practical examination, the duration shall be fixed minimum 3 hours and may be extended depends on the course.
3. The end semester examination is compulsory for all students and evaluated by the office of the Controller of Examinations following double evaluation system.

VI. Weightages:

1. For lecture based courses (Non-laboratory)

Continuous internal assessment		30%
End – semester examination	-	70%
2. For laboratory based courses / Practical

Sessional assessment	-	30%
End – semester examination	-	70%

VII. Supplementary Examination:

1. Students who have missed CIA on valid reason(s) may apply for retests to the concerned Course Teacher specifying the reason for the absence and the Course Teacher shall conduct a retest when satisfied with the validity of the reasons given for the absence with proper documentation and with the approval of the Programme coordinator/Head.
2. Students who have missed the end-semester written examinations on valid reason like hospitalization or accidents may make an application for supplement examination through Programme coordinator duly recommended by the Head within five days from the date of examination missed. The same may be communicated to the Controller of Examinations within 7 working days and the Controller of Examinations may conduct the supplementary examination within a month after paying the prescribed fee by the student. Or Students who have missed the end-semester written examinations on any reason shall be reappeared in the next semester.

3. A candidate who has failed in one or more course subjects in the previous semesters should be completed the course within 3 years from the date of registration to the course (within four additional semesters) or the registration will be cancelled.

VIII. Course wise Grading of Students Letter Grades:

1. Based on the performance, each student shall be awarded a Final Letter Grade at the end of the semester in each course.
2. The letter grades and their corresponding grade points are as follows:

Grade Points	Range for P	Grade
10	90-100	A++
9	80-89	A+
8	70-79	A
7	60-69	B+
6	50-59	B
0	Below 50	F

The Semester-end Grade Point Average (SGPA) and the Course-end Cumulative Grade Point Average (CGPA) are computed as follows:

The Credit Point in a said course may be calculated by using the formula

$CP = CV \times GP$, where CV is the Credit Value of the said course and GP is Grade obtained (Better to provide one example)

The SGPA may be calculated as follows:

$SGPA = \text{Sum of all CPs in the said semester} / \text{Sum of Credits in the said semester}$.

The CGPA may be calculated as follows:

$CGPA = \text{Sum of GPs in all the semesters/credits for the said program}$ The

CGPA may be expressed to an accuracy of two decimal digits

The percentage equivalence may be obtained by multiplying CGPA by 10.

3. The above grading is done by Controller of Examinations office after taking into account both CIA marks together with end semester marks.
4. No student is considered to have completed a course successfully and earned the credits when he / she Fails.

IX. Method of awarding letter grades:

1. In a reasonable time frame, the Controller of Examinations office will scrutinize the answer books by following “double valuation”. Then the finalized marks including CIA submitted by programme coordinator through Head are converted to the Grades to be awarded to the students for different courses.

X. Grade Card:

The grade card issued at the end of each semester to each student by the Controller of Examinations Office shall contain the following:

1. The credits for each course registered for that semester.
2. The performance in each course shown by the letter grade obtained.
3. The Grade Point Average (GPA) of all the courses registered for the semester.
4. The total marks secured by the candidate for each of the courses in which the candidate appeared for the end semester examinations.
5. For the computation of cumulative grade point average (CGPA) a similar formula is used in which the sum is obtained by adding over all the courses taken in all the semesters completed up to the point in time and substituted in the formula used in the case of CGPA.

XI. Eligibility for the award of the Diploma:

A student shall be declared to be eligible for the award of the Diploma in Industrial Safety, when he/she has fulfilled the following conditions.

1. Successful completion of prescribed course and has earned the required credit as specified in curriculum of the program within the speculated time with the minimum credit of CGPA score of 6.0.
2. Registered for and undergone all the core and completed the Field and Industrial report, if any as prescribed by the Scheme of Examinations. A student should enroll in a minimum of 40 credits and also attain the minimum pass marks in each of the enrolled subjects to be eligible for award of degree.
3. Successfully acquired the required credits under elective courses as specified in the curriculum of the Program within the stipulated time.
4. Has a CGPA of 6.0 (Minimum 50 % of allotted for each course) or higher.
5. Have no dues to the University, Hostel and Library.
6. Has no disciplinary action pending against him/her.
7. Classification of the student for awarding the degree will be as follows:

Sl. No.	CGPA	Classification
1	9.00 and above (Single attempt)	Pass; First class with distinction
2	9.00 and above (Multiple attempt)	Pass; First class
3	8.00-9.00	Pass; First class
4	7.00-8.00	
5	6.00-7.00	Pass; Second class
6	Below 6.00	Fail

XII. A. Procedure for award of mark:

The Controller of Examinations office is involved in valuation of answer scripts of various courses conducted as the end semester examination (70 marks). The answer scripts of different courses are subjected to double valuations. They are called as first and second valuation. Whenever the difference in marks between first and second valuation is within 20% marks, the average of the two marks will be taken as the mark secured and the results are **declared by the COE**. If the difference in mark is 20% and above, it will be referred to a third examiner and the third valuation will be compared with the nearest two other marks in arriving at the average mark.

B. Redressal on the award of the mark

1. When a student is aggrieved with regard to the award of mark to course(s), he/she shall make a formal representation on the matter to the Controller of Examinations through the Programme Coordinator and Head in the prescribed form and fees within the stipulated time (10 working days after receiving the announcement of the result).
2. The marks awarded for each answer will be re-totaled by a competent authority by the Controller of Examination office. The result of the re-totaled will be intimated to the candidate and Head within 15 days.

XIII. Details of Sessional Assessment / Internal Assessment for Core (For 30 Marks)

Examinations	Assessment	Marks
Test	TWO test performance	20
Assignment	ONE submitted	05
Seminar	ONE presentation of a given topic	05

The question paper for the test, topic of the assignments and seminar will be assigned by the respective course teacher. All tests will be conducted only on prior notice in the respective departments. The exact date and timing will be announced by the Programme Coordinator at the start of the semester.

XIV. Question Paper Pattern (Core, Allied and Elective)

MODEL QUESTION PAPER

QP CODE:

JSS Academy of Higher Education & Research, Mysuru
(Deemed to be University)

Diploma in Industrial Safety (IS) Examination - Year

Subject:

Note: Draw neat, labeled diagrams wherever necessary.

Your answers should be specific to the questions asked.

Time: 03 Hours

Max Marks: 70

I. LONG ESSAYS (Answer any TWO of the following)

2x15=30 Marks

- 1.
- 2.
- 3.

II. SHORT ESSAYS (Answer any FIVE of the following)

5x6=30 Marks

- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

III. SHORT ANSWERS (Answer all the following)

5x2=10 Marks

- 11.
- 12.
- 13.
- 14.
- 15.

Department of Environmental Science
Diploma Examination Scheme
(Diploma in Industrial Safety)

SEMESTER I					
Paper Code & Title	Student's study Hours/week	University Examination			Total Credit
		CIA	Theory/Practical Exam	Max. Marks	
IS-T1: Safety Management Systems	3	30	70	100	4
IS-T2: Safety Engineering	3	30	70	100	4
IS-T3: Fire, Explosion, Toxicity and Risk Assessment	3	30	70	100	4
IS-T4: Appraisal, Analysis, Inspection and Control Procedures	3	30	70	100	4
IS-P1: Field/Industrial Training and Visits report and Viva Voce*#	6			200	8
Total Credits for I Semester					24
SEMESTER II					
Paper Code & Title	Student's study Hours/week	University Examination			Total Credit
		CIA	Theory/Practical Exam	Max. Marks	
IS-T5: Standards and statutes	3	30	70	100	4
IS-T6: Industrial Hygiene and Occupational Health	3	30	70	100	4
IS-T7: Safety in Chemical Industries	3	30	70	100	4

IS-T8: Safety in Industries	3	30	70	100	4
IS-P2: Field/Industrial Training and Visits report and Viva Voce*#	6			200	8
Total Credits for II Semester					24
TOTAL SEMESTER CREDITS					48

* Students participated in industrial visit or training or undergoing practical training during classes will be awarded 4 credits

Practical is an optional to industrial training and practical examination conducted as per the university pattern