

Programme Guide

POST GRADUATE CERTIFICATE IN INDUSTRIAL SAFETY (PGCINDS)



**School of Engineering & Technology
Indira Gandhi National Open University
Maidan Garhi, New Delhi - 110068**

RECOGNITION

IGNOU is a Central University established by an Act of Parliament in 1985 (Act No. 50 of 1985). The Degrees/Diplomas/Certificates awarded by IGNOU are recognized by all the members of the Association of Indian Universities (AIU) and to be treated at par with Degrees/Diplomas/Certificates of all Indian Universities / Deemed Universities/Institutions vide UGC Circular No. F. 1-8/92 (CPP) dated February 1992 and AIU Circular No. EV/B(449)/94/176915-177115 dated January 14,1994.

Guidance	:	Prof. Uma Kanjilal, Vice Chancellor, IGNOU, New Delhi
Support & Cooperation	:	Prof. Sanjay Agrawal, Director School of Engineering & Technology (SOET)
Programme Coordinator	:	Prof. Sanjay Agrawal, Professor Electrical Engineering, SOET
CRC Preparation	:	Team from SOET
Print Production	:	(Publication)

Printed and Published on behalf of the Indira Gandhi National Open University by the Director, SOET.
Laser Typesetting by School of Engineering and Technology, New Delhi-110 068, Printed at

CONTENTS

1. The University	4
2. School of Engineering & Technology	5
3. Post Graduate Certificate in Industrial Safety	6
4. Programme Delivery	9
5. Student Support Services	9
6. Instructional System	10
7. Term End Examination	13
8. Evaluation Methodology	14
9. Other Important Information	15
10. Contact Persons	16

1. THE UNIVERSITY

Indira Gandhi National Open University (IGNOU) was established in 1985 by an Act of Parliament to achieve the following objectives:

- Democratizing higher education by taking education to the doorsteps of the students
- Providing access to high quality education to all those who seek it, irrespective of age, region, or formal qualifications
- Offering need-based academic programmes by giving professional and vocational orientation to the courses
- Promoting and developing distance education in India
- Setting and maintaining standards in distance education in the country — as an apex body for the purpose.

Objectives of the University

The University has the following major objectives:

- Promoting the educational well-being of the community;
- Democratizing higher education by providing easy access to all those who desire to improve their qualifications, skills and competence by taking education to the door-steps of people living even in remote areas;
- Offering need-based innovative academic programmes by giving professional and vocational orientation to the course curriculum;
- Disseminating learning and knowledge through an innovative multiple media teaching-learning system.

IGNOU stands as the No. 1 Open University in the National Institutional Ranking Framework (NIRF) and the first Open University to receive the prestigious A++ accreditation from NAAC, these are recognitions of its excellence in the open, distance and online learning system. IGNOU has now emerged as the largest University in the world. It is mandated to cover large segments of population across the length and breadth of the country particularly the disadvantaged groups of society engaged in various vocations and professions.

The University follows a learner-centric approach. It has successfully adopted a policy of openness and flexibility in terms of relaxed entry qualifications and provision for multiple entry and exit, pace, place of study, etc. At present, IGNOU is offering more than 300 programmes and has over 3 million students on its roll. The University operates through a strong network of Regional Centers and Study Centers/Programme Study Centers across the country, which provide individualized support to the learners. Most of these centres are equipped with the state-of-the-art tele-conferencing facility. The University produces high

quality and rich content courseware for its learners for which the IGNOU was conferred an Award of Excellence for Distance Education Materials by the Commonwealth of Learning (COL), Canada.

Academic Programmes

The University offers short term non credit programmes as UG and PG Degree as well as wide range of programmes leading to Certificate, Diploma and P.hd Programme covering conventional as well as innovative programmes. Most of these programmes have been developed after an initial survey of the demand for such studies. They are launched with a view to fulfill the student's needs for:

- Certification
- Improvement of skills
- Acquisition of professional qualifications
- Continuing education and professional development at workplace
- Self-enrichment
- Diversification of knowledge, etc.

2. SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)

The School of Engineering and Technology has the responsibility of initiating academic, continuing and extension education programmes in the areas of engineering and technology. The School has developed several programmes aimed at increasing job potential and economic advantage to the learners. To fulfill its mandate, the School regularly interacts with employing agencies, professional bodies and industry so as to reflect educational and training needs of the targeted learner group in the curriculum. The school practices participative and collaborative strategy by inviting different industries.

The instructional packages are designed and developed with the help of experts drawn from various institutions like IITs, National Institutes of Technology (NITs), reputed Universities and Engineering Colleges and Industry. The School has forged alliances with the Construction Industry Development Council (CIDC), Directorate General of Shipping (DGS), Khadi and Village Industries Commission (KVIC), Footwear Design and Development Institute (FDDI), Ministry of Power (MoP), and Hero Honda Motors Ltd. (HHML), etc. to design, develop and conduct tailor-made courses to meet the specific needs of respective employment sectors.

3. POST GRADUATE CERTIFICATE IN INDUSTRIAL SAFETY

SOET offers Post Graduate Certificate in Industrial Safety (PGCINDS) with the following broad objectives:

- The Post Graduate Certificate in Industrial Safety (PGCINDS) Programme aims to develop skilled human resources in the field of industrial safety at the local, regional and national levels.
- It seeks to build competencies and professional skills among learners to avail employment opportunities in various industrial sectors.
- It aims to upgrade the knowledge and skills of those working in industry without a formal training.
- It also caters to the academic needs of those aspiring for higher learning.

Credit System

The University follows the 'Credit System' for most of its programmes. Each credit amounts to 30 hours of learner study comprising all learning and assessment activities, such as: reading and comprehending the print material, listening to audio, watching video, attending counseling sessions, practical sessions, teleconferencing, writing assignment responses, refereeing books in library, discussions with peer group etc. Completion of these academic programmes requires successful clearing of the assignments, Term-end examination of each course, project work and field training, where ever applicable.

Details of the Programme

Some pertinent details of the programme are given below:

Programme Duration	6 Months (Minimum) and 1 Year (Maximum)
Programme Fee	6000/- plus registration & development fee as applicable
Eligibility	BE/B. Tech. or MBBS/BDS/BAHMS/B. Arch/BCA/Bachelor in fire & safety or Graduate in Science with any Discipline.
Age	No bar
Medium of Instruction	English

Programme Structure of PGCINDS

There are five courses in the programme. The total credits of a course have been worked out on the basis of course content and their weightages. Table 1 gives the details of the Programme structure of PGCINDS.

Table 1 Programme Structure of the PGCINDS

Sl. No.	Course Code	Title of the Course	Theory / Practical	Type of Course Compulsory / optional	Credits
1.	MIS – 021	Safety Philosophy and Principles of Accident Prevention	Theory	Compulsory	4
2.	MIS – 022	Industrial Safety: Rules and Acts	Theory	Compulsory	2
3.	MIS – 023	Safety in Construction Industry	Theory	Compulsory	2
4.	MIS – 024	Mechanical and Electrical safety	Theory	Compulsory	2
5.	MISP – 021	Project	Project	Compulsory	6

The details of course structure of “**Post Graduate Certificate in Industrial Safety (PGCINDS)**” is given below:

Course Code: MIS -021

Course Title: Safety Philosophy and Principles of Accident Prevention

Block-1 : INTRODUCTION TO INDUSTRIAL SAFETY

- Unit-1 : Basic Concept of Industrial Safety
- Unit-2 : Safe Working Practices
- Unit-3 : Personal Protective Equipment (PPE)
- Unit 4 : Fire Safety

Block-2 : INTRODUCTION TO INDUSTRIAL SAFETY ENGINEERING

- Unit-5 : Concept of Safety Engineering (Ergonomics, Process Safety)
- Unit-6 : Storage of Material Handling of Hazardous Material
- Unit-7 : House Keeping (5 S concepts)
- Unit 8 : Safeguarding of Machinery

Block-3 : INTRODUCTION TO INDUSTRIAL SAFETY MANAGEMENT

- Unit-9 : Safety Organization,
- Unit-10 : Safety Policy
- Unit11 : Training and Awareness Creation
- Unit 12 : Safety Audit

Block-4 : INDUSTRIAL ACCIDENTS AND ITS PREVENTION

Unit-13 : Introduction to Industrial Accident

Unit-14 : Types of Accidents and Its Analysis

Unit-15 : Cost of Accidents,

Unit 16 : Prevention of Accidents

COURSE CODE: MIS- 022

COURSE TITLE: Industrial Safety: Rules and Acts

Block-1 : INDUSTRIAL ACTS AND LAWS

Unit-1 : Introduction to Industrial Acts and Laws

Unit-2 : Duties and Responsibilities of Occupier and Factory Manager

Unit-3 : Licensing and Registrations

Unit 4 : Provision of Welfare under Factory Act 1948

Block-2 : LIABILITIES AND RESPONSIBILITIES

Unit-5 : Liabilities of Occupiers

Unit-6 : Provision relating to Hazardous Processes

Unit-7 : General Penalty for Offences

Unit 8 : Case Studies

Course Code: MIS- 023

Course Title: Safety in Construction Industry

Block-1 : SAFETY DURING CONSTRUCTION

Unit-1 : General Safety in Construction

Unit-2 : Safety aspects Underground Works

Unit-3 : Safety in Works at Height

Unit 4 : Safe Handling of Construction Machinery and Material

Block-2 : PREVENTION OF ACCIDENTS IN CONSTRUCTION

Unit-5 : Environment Protection at Work Site

Unit-6 : Safety During in Demolition Operations

Unit-7 : Training and Development of Construction Workers

Unit 8 : Case Studies on Construction Safety

Course Code: MIS- 024

Course Title: Mechanical and Electrical Safety Management

Block-1 : SAFETY IN MACHINERY

- Unit-1 : Job Safety Analysis and Machine Guards
Unit-2 : Safety in Material Handling
Unit-3 : Safety in Design and Safe Working Practices
Unit 4 : Case study and Exercise.

Block-2 : SAFETY IN ELECTRICAL WORKS

- Unit-5 : Electrical Safety, Fire and its Prevention
Unit-6 : Safety of Electrical Equipments
Unit-7 : Indian Electricity Rule
Unit 8 : First Aid

Course Code: MISP 021

Course Title: Project

As assigned by the course coordinator to carry out a project related to Industrial Safety. The project will continue throughout the complete semester. Details are given in Project Guide.

4. PROGRAMME DELIVERY

The programme delivery mechanism for the Post Graduate Certificate in Industrial Safety (PGCINDS) shall be as follows:

- The programme will be delivered by the School of Engineering & Technology, IGNOU, New Delhi.
- There will be one assignment for each course MIS-021, MIS-022, MIS-023 and MIS-024.
- For the course MISP-021, each student will complete the project as per the guidelines, given in the Project Guide.

5. STUDENT SUPPORT SERVICES

In order to provide individualised support to its learners, the University has created a number of Learner Support Centres (LSCs) throughout the country for this Programme. These are administratively coordinated by the Regional Centres (RCs). The LSCs are the contact points for the students on all major aspects of the Programme. These include counselling sessions, practical sessions, reference library facilities, disseminating information and advice, facilities for audio-visual training aids and teleconferencing.

The University may not always be able to communicate to all the students individually. All the important communications are sent to the Regional Directors who in turn will intimate them to

the LSC Coordinators. The LSC Coordinators display such Circulars / Notifications on their notice boards for the benefit of the students. You are, therefore, advised to be in touch with your LSC Coordinator on a more regular basis so as to get the latest information about assignments, submission schedules (assignments and examination forms), declaration of results, etc. The LSC also provides following information on:

- Counseling and advice on your programme as well as other academic programmes offered by the University.
- Pre-admission, during admission and post-admission counseling.
- Induction for newly enrolled students.
- Supply of academic counseling schedules and project schedules, if any.
- Provide Library facilities.
- Receipt and evaluate assignment responses submitted by you.
- Attend to academic and administrative queries pertaining to registration, examination, assessment, feedback etc.

6. INSTRUCTIONAL SYSTEM

The Open University system is more learner-oriented and the learner is an active participant in the pedagogical (teaching and learning) process. Most of the instructions are imparted through distance education methodology.

Study Learning Material: Study material is available in soft copy on e-Gyankosh portal of IGNOU and hard copy of Self Learning Material (SLM) will be dispatched on your address.

Academic Counseling: In the ODL education, face-to-face contact between the learners and their tutors/counsellors is relatively less. The purpose of such a contact is to answer some of your questions and clarify your doubts that may not be possible through any other means of communication. It also provides you with an opportunity to meet your fellow students. There are academic counsellors at the LSC to provide counselling and guidance to you in the courses that you have chosen for study. Normally, these sessions will be held at the LSC on Saturdays and Sundays. You should note that the counselling sessions would be very different from the classroom teaching or lectures. Counsellors will not be delivering lectures as in conventional teaching. They will try to help you to overcome difficulties that you face while studying for the PGCINDS programme. In these sessions, you must try to resolve your subject-based difficulties and any other programme related problems.

Note: Before attending the counseling session for each course, please go through your course material as per the session schedule and make a plan of the points to be discussed. Unless you have gone through the Units, there may not be much to discuss and a counseling session may not be fruitful.

Web Based Support

The learners can have access to IGNOU's website at the following address (URL): <http://www.ignou.ac.in>. You can download assignments, old question papers, circulars, etc. from the website. The Programme Guide is also available at the website. The most of information are available at the IGNOU's website.

Assignments: Assignments constitute an essential component of the instructional system. You are required to write responses for these assignments based on your understanding of courses, discussions and interactions you will have with counselors and fellow learners. **You are required to submit assignment responses of every course at the allotted Study Centre or Regional Center only in the form of hard copy. Assignments sent through email will not be considered for evaluation.** Every assignment marks will be counted for the final marking for each course.

The purpose of introducing an assignment system and giving assignments a weightage of 30 percent per course is intended to test your capacity and capability of your technical and practical experiences. Therefore, you must devote enough time for preparing and writing assignment responses as per the guidelines of the university and submit them to the study centre. Please make sure that you must write assignment responses on your own which will improve your understanding, knowledge and skills about the course curriculum. At the same time you are also advised not to get tempted to reproduce the course material given in the units or assignments responses of others. Any learners, which may indulge into such practices, may lose their valuable time in acquiring knowledge and skills in the subject. Further, if you reproduce the textual material from the course materials provided or any other source, you may be penalized by awarding "Zero marks".

While preparing assignment responses you must keep the following points in mind, which may help you for preparing better assignment responses:

- Read assignment question carefully and identify various sources of material.
- Make your answer precise, concise and systematic, which is relevant to assessment question.
- Supplement your response with examples, illustrations and real life situations with activities which will help you acquiring better knowledge and skills.

- Stick to the word limit if indicated in the assignment, by drafting, re-drafting assignment responses till you arrive to a final draft response.
- **Write answer in your own handwriting, and don't send typed assignments.**

Instruction for sending assignment response

While sending the assignment responses the following points should be particularly taken care:

- Send assignment responses complete in all respect. Partial or incomplete assignment will not carry any credit
- Use A-4 size paper for writing your responses and leave a margin of about 2 ½ on the left side for writing tutor comments and providing feedback
- Always retain a copy of the assignment response with you as a precautionary measure.
- The assignment should be submitted to the Study Center or Regional Centre allotted to you before the last date indicated in the operation schedule given by the university
- Procure a set of new assignment question if an assignment falls on a holiday, the same may be submitted on the next working day.
- Write your enrolment number, name and full address at the right hand corner of the 1st page of your assignment response. **Also attach the copy of your student I Card provided by IGNOU.**
- Please do not submit/forward your assignment to anyone through email. Follow guidelines provided by IGNOU time to time.

The course for which the assignment has been made, its Course Code No. and Assignment Code should be written in capital letters in the centre of the top of the 1st page of the response sheets. The top left hand corner should be kept for office use. The top of the 1st page of your response(s) should look something like this:

Course Title	_____
Course Code	_____
Enrolment No	_____
Name	_____
Address	_____
Telephone	_____
E-Mail	_____
Date of Submission	_____

Copy of student I Card must be attached with assignments.

Once you get the pass marks in an assignment, you cannot resubmit assignment responses, if any, for improvement of grade/mark. Assignment is not subject to re-evaluation except factual errors, if any.

The completed assignment response should be sent to the Coordinator of the Study Centre or Regional Centre otherwise, the assignment response may be sent through speed post to respective study centre or regional centre with clearly indicating all information on envelop.

Project Work: You have to complete a project of your choice as per the guidelines given in Project Workbook.

7. TERM END EXAMINATION

Term End Examination (TEE) is another evaluation tool in the PGCINDS programme. The university conducts Term-end examination twice a year in the month of June and December. Students will be permitted to appear in term-end examination subject to the conditions and registration for the courses, in which they wish to appear is valid, minimum time to pursue these courses is elapsed and they have also submitted the required number of assignment (s) if any, in those courses by the due date. Prescribed Fee has to be paid to appear Term end Examination. Students can also submit On-line examination form as per the guidelines through IGNOU website at www.ignou.ac.in.

In order to appear in the Term-End-Examinations, the students are required to fill in the Term End Examination form. The Examination form is to be submitted online through IGNOU Website www.ignou.ac.in along with an **examination fee of Rs. 200 per course**. The written examination will be held for MIS-021, MIS-022, MIS- 023 and MIS- 024 only. For MIS- 021, there will be project evaluation. The last dates for submitting the filled-in examination forms are as follows:

Examination Months	Dates for Submission of Examination Forms	
	Without Late Fee	With a Late Fee* of Rs. 1000
June	1st February to 31st March	1st April to 10th May
December	1st August to 30th September	1st October to 10th November

*The dates/fee may change time to time as per IGNOU norms. Please check the status on website when required.

After receiving the examination form, the University will upload the hall ticket on the University website before the commencement of TE Examinations.

Your enrolment number is your Roll Number for examinations. You should be careful in writing it. Any mistake in writing the Roll Number will result in non-declaration of your result. Final term end examination will be conducted at selected IGNOU examination centres.

To be eligible to appear at the term end examination in any course, you are required to fulfill the following conditions:

- You should have submitted the assignment responses for the respective courses.
- You should have submitted the Examination Form in time in which you would like to write examination.
- You should have valid registration at the time of submission of Examination form.
- You should complete a minimum duration of the programme.

Examination date sheet and schedule which indicates the date and time of examination for each course is sent to all the Study Centers in advance. The same is also notified through **IGNOU Website** from time to time.

8. EVALUATION METHODOLOGY

The system of evaluation in IGNOU is also different from that of the conventional universities. IGNOU has a multi-tier system of evaluation.

- Continuous evaluation mainly through assignments which are tutor marked assignments.
- The Term End Examinations.
- Projects

The evaluation of learners depends upon various instructional activities undertaken by them. A learner has to write assignment responses compulsorily before taking term end examination from time to time to complete an academic programme. Term-end examination will be conducted at the study centre/exam centers, whereas the project submission will be done as per information given in the Project Guide.

The weightage of TMA (Tutor Mark Assignments) and TEE for all the courses is 30% and 70% respectively in the overall evaluation scheme of the programme.

A student will be awarded marks for the TMAs and for Term End Examination (TEE) part for each course. To clear a course, a student will have to clear both the segments of the course. Following table gives minimum percentage of marks required for the clearance of a course:

Evaluation Component's part for the Course	% of marks for Clearance
TMA	≥40%
Term-end Examination (TEE)	≥40%
Overall Performance	≥40%

To facilitate statement of overall performance at the end of the programme, the calculation of overall percentage will be based on the weighted average system and the precision will be up to the one point after the decimal. Calculations will be carried out using the following scheme:

$$\text{Overall Percentage} = \frac{C_1P_1 + C_2P_2 + C_3P_3 + \dots}{C_1 + C_2 + C_3 + \dots} \times 100$$

where $C_1, C_2 \dots$ denote credits associated with courses taken by the student, and

$P_1, P_2 \dots$ denote the percentage of marks awarded in respective courses.

Depending on the overall percentage of the marks secured by a candidate the division will awarded as follows:

- **1st Division (With Distinction) - 75% and above**
- **1st Division - 60% to 74.9%**
- **2nd division - 50% to 59.9%**
- **Pass - 40% to 49.9%**
- **Unsuccessful - Below 40%**

9. OTHER IMPORTANT INFORMATION

Admission Schedule

The PGCINDS programme is available in both July and January Cycles of admissions.

Application form can be submitted on the online admission portal of University

<https://ignouadmission.samarth.edu.in>

Programme Fee

The programme fee of PGCINDS is Rs. 6000/- plus registration & development fee as applicable. The fee is to be paid through credit/debit card/netbanking.

Some Useful Hints

- Please read the Programme Guide thoroughly and keep it handy. It contains most of the information you are likely to need during your perusal of the PGCINDS programme.
- Please keep a record of all the information/letters/communication received from and sent to the University.
- Do write to us if you face any problem while working through the programme. Please write briefly and neatly for a quick redressal of your problem.
- In the case of change of address inform the relevant authorities well in advance.
- To get the best out of the programme, maintain a time-table for yourself and stick to it. Make the time-table realistic taking into account some unforeseen situations, such as illness, official work, social obligations etc.
- Be regular in your work and devote at least two hours of study every day.
- Use the prescribed forms appended in Annexure for different purposes to facilitate prompt action.
- In this Section we are enclosing the sample of some forms which are useful to you. Whenever you have to correspond with the University, please get the photocopy of the relevant form, fill it carefully and send as per instructions therein. The detailed instructions for all these forms are provided in this programme guide in different sections. Here is the link to important forms:
<http://ignou.ac.in/ignou/studentzone/forms/2>

10. CONTACT PERSON

For any clarification and help, you may contact the Programme Coordinator at the following addresses:

Prof. Sanjay Agrawal,

Programme Coordinator

School of Engineering and Technology (SOET)

Indira Gandhi National Open University (IGNOU)

Maidan Garhi, New Delhi - 110 068

Phone No. : 91-11-29572919,

E-mail: project_pgcinds@ignou.ac.in ; sanjay.agrawal@ignou.ac.in