



தமிழ்நாடு திறந்தநிலைப் பல்கலைக்கழகம்
Tamil Nadu Open University, Chennai

சென்னை – 15

தொடர் கல்விக்கானப் பள்ளி
School of Continuing Education

Short Term Course in Industrial Safety and Security (SISS)

(From Academic Year 2020-2021 onwards)

பாடத்திட்ட அறிக்கை மற்றும் விரிவான பாடத்திட்டம்
Programme Project Report (PPR) and Detailed Syllabus

**Adhoc Board of Studies [BOS]
of School of Continuing Education**

1. Director of School-Chairman		
(1)	Dr. P. Thiyagarajan	Professor & Director, School of Continuing Education, Tamil Nadu Open University, Chennai
2. Internal Faculty Members		
(1)	Er. R. Meenambigai	Assistant Professor, School of Continuing Education, Tamil Nadu Open University, Chennai
3. External Faculty Members		
(1)	Er.N.Sivashanmugam	Assistant Professor and Director(i/c), School of Computer Science, Tamil Nadu Open University, Chennai
(2)	Dr. R.Kalaiarasi	Assistant Professor, School of Computer Science, Tamil Nadu Open University, Chennai
3. External Experts		
(1)	Dr.S.Ilaiyavel	Associate Professor, Department of Mechanical Engineering , Sri Venkateswara College of Engineering, Sriperumphuthur, Kanchipuram District
(2)	Mr.M.Prabhugandhi	Safety Director, MPSS Construction, 3A/110, Bhavanadhiyaar Main Street, Kamarajapuram, Chennai-73

Short Term Course in Industrial Safety and Security (SISS)

- 1. Eligibility** : Passed in S.S.L.C or Matriculation or any equivalent examinations.
- 2. Duration** : Minimum three Months (75 Hours, 2 ½ hours per day for all week days or 6 hours each on Saturdays and Sundays) and Maximum six months.
- 3. Medium** : English Medium
- 4. Age** : 15 Years and Above
- 5. Admission:** The Candidates will be admitted for the Short Term Programme through out the year
- 6.Fee** : Rs.1500/-

7. Programme Structure and Scheme of Evaluation

S.No	Course	Course Code	Credits	Marks Distribution		
				Continuous Internal Assessment (Internal)	Term End Exam (External)	Total
1	Industrial Safety and Security-Theory	SISS-11	6	30	70	100
2	Safety Devices -Practical	SISS-P1	2	30	70	100
Total			8	60	140	200

The Scheme of Evaluation includes the Continuous Internal Assessment–CIA (Assignment for 25 Marks and attendance for 5 Marks based on percentage of Attendance i.e. 50-60%- 1 Mark, 60-70% -2-Marks, 70-80% -3-Marks, 80-90% -4-Marks and Above 90- 5-Marks) and Term End Examination.

8. Examinations

The Examination for the Short Term Programme shall consist of Theory and Practical.

(i) Theory Examinations: The Theory Examinations shall be of three hours duration and shall be conducted at the end of three months. The candidates who are failing in the Course will be permitted to re-appear each failed Course in the subsequent examinations.

(ii) Practical Examinations: The practical examinations (if any) shall be of three hours duration and shall be conducted at the end of three months. The candidates who are failing in any practical(s) will be permitted to reappear for failed practical(s) in the subsequent examinations.

9. Question Pattern for Theory Examinations

Theory Examination (External): Students shall normally be allowed to appear for Theory Examination by completing Practical and Assignment. The Term-End Examination shall carry Section- A and Section- B

Section-A	Multiple Choice Questions	20 X 2 = 40 Marks
Section-B	Five out of Eight Short Answer Questions [Each 6- Marks] (Practical Questions if any may be included)	5 X 6 = 30 Marks
Total		70 Marks

10. Passing Minimum

(i). For Theory Examination

The Candidates shall be declared to have passed the examination if the candidate secures not less than 25 marks in the Term End Examinations (TEE) in each theory paper and secures not less than 13 marks in the Continuous Internal Assessment (CIA) and overall aggregated marks is 40 marks in both external and internal taken together.

Continuous Internal Assessment (CIA)		Term End Examination (TEE)		Overall Aggregated Marks	Maximum Marks
Minimum Pass Mark	Maximum Pass Mark	Minimum Pass Mark	Maximum Pass Mark	CIA + TEE	
10	30	25	70	40	100

Note: When a learner failed to secure 40 per cent of aggregate marks, he/she may re-appear in term end examination or re-do the assignments for securing passing minimum.

11. Classification of Successful Candidates:

The Candidates who pass all the courses prescribed and who secure 60% and above in the aggregate of marks in the Core courses will be placed in the First Class. Those securing 50% and above but below 60% in the aggregated will be placed in the Second Class. All other successful candidates will be placed in the Third Class.

12. Delivery of Programme: Short Term Programme will be offered through Community College/ Constituent Community Colleges. The Assistant Professors/Associate Professors/ Professors of relevant faculty employed in Colleges/Universities/Higher Educational Institutions and Industrial Expert Institutions are eligible to handle Academic Counselling for Short Term Programmes.

13. Ranking

The University Rank shall be offered for the toppers (First Rankers) in the University Examinations **(having passed their examinations in the first appearance within the prescribed duration of the respective programme. Absence from an examination shall not be taken as an attempt)**

The top scorers in the University Rank Examinations would be declared as University Rank Holders, irrespective of their grades/marks in their respective University Term End Examinations.

Rank Certificate will be issued for a Programme as follows:-

- a) There is no Rank if the learner strength of concerned Programme is below Fifty.
- b) The learners strength of the Programme concerned will be indicated in the Rank Certificate.
- c) The first Rank holder (gold medalist) will be eligible to get the rank certificate in the University convocation ceremony.

14. Cancellation of Admission

Admission is liable to be cancelled at any stage on the following grounds:-

- A candidate admitted to a programme provisionally without verifying and ascertaining his / her eligibility for admission and found ineligible later through scrutiny of the filled-in admission form.
- Suppression of facts, furnishing incomplete, wrong or false information in filled-in Admission Form.
- Misconduct, Indiscipline and Violation of University Norms, Rules and Regulations.

15. Refund

If it is ineligible later on, admission will be cancelled and claim for refund of such fees will be considered by the University after deduction of service charges, as applicable from time to time as per prevailing norms of the University.

16. Legal Issues

Any issue of conflict between the candidate and the University shall be cleared through mutual representation from both the sides, and in case of conflict of issues still persist, they shall be settled in the Court of Law under the Jurisdiction of Chennai.

Detailed Syllabus

SISS-11: Industrial Safety and Security-Theory

Unit-1: Principles of Safety Management

Evolution of modern safety concept- general concepts of management – quality and safety-line and staff functions for safety-budgeting for safety-safety policy - Safety audit, audit methodology, Non Conformity Reporting (NCR), audit checklist and report - Concept of an accident – principles of accident prevention – accident investigation and analysis – Safety education and training - Importance of training – creating awareness, safety posters, safety displays, safety pledge, safety incentive scheme – Domestic Safety and Training.

Unit-2: Industrial Safety, Health and Environment Acts

Tamil Nadu Factories Rules 1950 under Safety and health chapters of Factories Act 1948 - Environment Act 1986 - Biomedical waste (Management and handling Rules- 1989) - The noise pollution (Regulation and control) Rules, 2000 - The Batteries (Management and Handling Rules) 2001- Air Act 1981 and Water Act 1974. Manufacture, storage and import of hazardous chemicals rules 1989 - Petroleum rules, Gas cylinder rules- Explosives Act 1983 - Pesticides Act

Unit-3: Fire and Electrical Safety

Fire properties of solid, liquid and gases - fire spread - toxicity of products of combustion - Sources of ignition – fire triangle – principles of fire extinguishing – various classes of fires – A, B, C, D, E – types of fire extinguishers – fire alarms and sirens – fire. Electrical hazards: Primary and secondary hazards-shocks, burns, scalds, falls. Protection system: Fuse, circuit breakers and overload relays – protection against over voltage and under voltage – overload and short circuit protection-no load protection- earth fault protection.

Unit-4: Material Handling and Safety

Selection of plant locations, territorial parameters, considerations of land, water, electricity, location for waste treatment and disposal. Working Conditions: Principles of good ventilation, purpose, physiological and comfort level types. Manual Material handling: Preventing common injuries, personal protection. Mechanical material handling: Hoisting apparatus, cranes, guards and limit devices, signals, operating rules, maintenance safety rules, inspection and inspection checklist – conveyors, precautions, types, applications.

Unit-5: Safety in Construction

Hazards of Construction and prevention: Excavations, basement, trenches, shafts – scaffolding, causes of accidents, scaffold inspection checklist – false work – erection of structural frame, dismantling – construction of high rise buildings. Working at heights: OSHA 3146 – OSHA requirement for working at heights, work permit systems, height pass. Safety in demolition work: Safety in demolition work, manual, mechanical, using explosive - pre survey inspection, method statement, site supervision, safe clearance zone, health hazards from demolition.

SISS-P1: Safety Devices-Practical

List of Practical Experiments

1. Accident Investigation – Report Format
2. Handling and Operation of Fire extinguishes- Type-A,B,C,D,E
3. Handling and Operation of Hydrant Pipes and Hoses
4. Handling and Operation of Foam Generators
5. Conduction of Fire Drill
6. Handling of LPG and Other Gas Cylinders-Safety Measures
7. Safety Measures and Inspection Check list for Conveyors, Cranes, Excavations Machines