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DGFASLI, MUMBAI

F. No-99/41(AFIH)/2023 Date: 21.12.2023

NOTICE

Sub: Publication of the Competency Based Course Curriculum and Guidelines for Three Month Duration Training Programme in Industrial Health by DGFASLI starting from 2024 and beyond. - reg

As approved by the competent authority, the Competency Based Course Curriculum and Guidelines for Three Month Duration Training Programme in Industrial Health (as enclosed) by DGFASLI starting from the year 2024 and beyond is hereby published.

This is issued with the approval of the competent authority.

Dr. Arkaprabha Sau
Deputy Director (Medical)

Enclosed: As above

COMPETENCY BASED COURSE CURRICULUM AND GUIDELINES FOR THREE MONTH DURATION TRAINING PROGRAMME IN INDUSTRIAL HEALTH

ASSOCIATE FELLOW OF INDUSTRIAL HEALTH (AFIH)

GOVERNMENT OF INDIA, MINISTRY OF LABOUR & EMPLOYMENT
DIRECTORATE GENERAL FACTORY ADVICE SERVICE AND LABOUR INSTITUTES
SION | MUMBAI
DECEMBER 2023

PREFACE

The significance of the training program on industrial health for doctors lies in its capacity to enhance their expertise and knowledge, equipping them with the necessary skills to address and manage health challenges specific to industrial environments. Three Month Duration Training Programme in Industrial Health will enable Indian registered medical Doctor of Modern Medicine to become a medical officer who is considered as competent occupational health physician in different industrial establishments. Upon successful completion of the training program, participants will be granted the title of Associate Fellow in Industrial Health, accompanied by a certificate. It is three months, fulltime, regular, offline training programme consisting of lectures series, laboratory work, practical works, demonstration & tutorial, educational / industry visit, speciality clinical exposure and project work. The practical, tutorial, demonstration activities are integral components of the day-to-day course curriculum with the involvement of multiple disciplines including Industrial Medicine, Industrial Hygiene, Safety, Staff Training and Productivity, Human Physiology, Industrial Psychology, etc. Industrial Medicine and Industrial Hygiene laboratories and practical, field visit to the industries and to their occupational health centres to understand the existing occupational health system are also the basic and essential components of the course curriculum.

The objectives of the course are to enable the doctors

- To identify and manage the occupational health disorders / occupational diseases encountered in various industries in the country and to manage the industrial injuries, accidents, illnesses caused by chemical intoxication, in general and in hazardous process industry in particular.
- To suggest preventive and control measures of such occupational health problems.
- To advise, supervise and participate in the national and international programmes on occupational health of industrial workers, improving productivity and prosperity.

The course was introduced in the year 1992 at the Central Labour Institute, Mumbai.

The underlying concept of competency – i.e., the habitual and consistent use of knowledge, technical skills, clinical reasoning, communication, emotions, values and reflection in daily practice for the benefit of the individual (workers) and the community (industry) being served. Competency based course curriculum ensures that the training participants should consistently demonstrate the desired behaviour throughout their professional carrier rather than only during the final examination. The new competency-based course curriculum of the AFIH course has been designed to meet the requirements of the industries at national and international level with emphasis on sustainable development.

PROGRAMME GOALS

The goals of this Certificate training programme in Industrial Health namely AFIH are:

- To train groups of medical personnel in Occupational and Environmental Health issues
- To identify/recognize Occupational and/or Environmental Health related problems, undertake investigations and formulate remedial/control measures.
- To provide regular update about recent advances in the field.
- To create skilled medical manpower in the area of Occupational Health management for betterment and upliftment of health and wellbeing of the community in general and industrial workers in particular.

SPECIFIC LEARNING OBJECTIVES

The AFIH course is to produce a competent medical professional who will be able to:

- apply the skills of a trained medical practitioner to:
  - diagnose and manage disease and injury in relation to occupation
  - determine the relationship between health and fitness to work
  - advise on the effect of major contemporary health issues in workplaces
- conduct workplace and preliminary environmental assessments in order to recognise, evaluate and control physical, chemical, biological, design-related and psychosocial hazards
- retrieve, critically appraise and disseminate occupational and environmental health & safety information in readily understandable terms
- apply management skills in order to:
  - coordinate and manage occupational and environmental health and safety programs,including health surveillance
  - effect relevant change in workplaces
  - negotiate and resolve conflict relating to occupational and environmental health and safety issues
- communicate effectively in order to secure the cooperation of management, employees & colleagues in the provision of a safe and healthy workplace
- be an advocate for health in workplaces and the broader community
- interpret the legislative, regulatory, and medico-legal aspects of occupational & environmental health and safety and be able to apply these in practice
- design, implement and manage a vocational rehabilitation program in the workplace, provide on-hand practical training to recognise health problems related to occupation, confirm the diagnosis and suggest remedial measures, assess the factors responsible for the causation of the health problems in working & general environment conditions
- design, conduct, implement and evaluate preventive strategies in workplaces
  impart training in systematic collection of information, compilation and presentation of data, storage, record keeping and retrieval of data in respect of each worker.
- participate in continuing professional development in order to respond to changes in workplaces and keep abreast of the latest developments on occupational and environmental medicine, and health and safety issues
- practical knowledge in computer application and drawing valid conclusions by applying appropriate statistical methodology.
- develop basic skills in public relations, health education and public awareness programme through effective communication and information technology.

SUBJECT SPECIFIC COMPETENCIES

At the end of the course, the delegates should have acquired knowledge in the following:

A. Cognitive Domain

1. Basic knowledge on the structure of the different organ systems of human body, their functions and response to adverse occupational / environmental conditions.
2. Applied aspects of Occupational and Environmental Health.
3. Occupational / Environmental Health Epidemiology and biostatistics.
4. Occupational / Environmental Health disorders and diseases.
5. Biochemical, microbiological, and pathological aspects of Occupational Health
6. Toxicological aspects of Occupational / Environmental exposures.
7. Work physiology – Ergonomics, Biomechanics, and stressors.
8. Basic understanding of Industrial Management, Industrial Hygiene, and Industrial safety
9. Legislation related to Occupational health and safety.
10. Recent Advancement in the field of Occupational Health, Hygiene and Safety

B. Affective Domain:

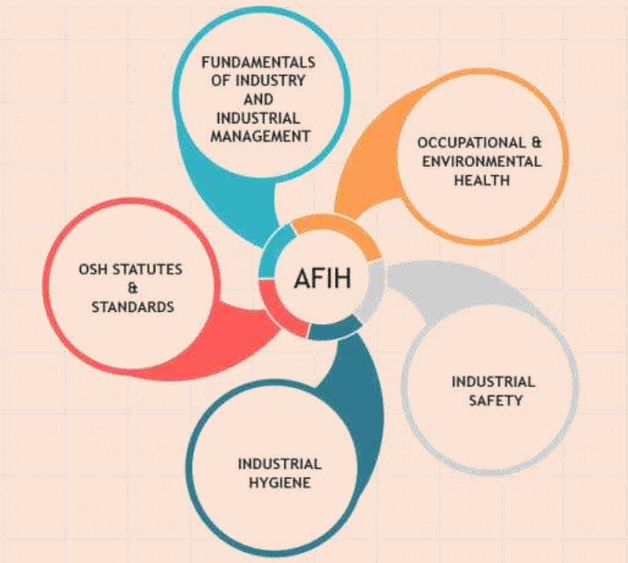
1. The AFIH delegates should be able to function as a part of a team, develop an attitude of cooperation and healthy interact with the workers, occupiers, management, law and order enforcement agencies and other colleagues to provide the best possible occupational service in the industry
2. The AFIH delegates should always adopt ethical principles and maintain proper etiquette in dealings with workers, patients, relatives, and other health personnel and to respect the rights of the workers/patient including the right to information and second opinion.
3. The AFIH delegates should develop communication skills to prepare reports and professional opinion as well as to interact with workers, patients, peers and paramedical staff, occupiers, management, law and order enforcement agencies in a professional way.

C. Psychomotor domain

1. Demonstrate clinical skills of preparing case history, examination, interpretation of laboratory results, provisional diagnosis, and medical management of occupational diseases
2. Conduct pre-medical examination, periodic medical examination and exit medical examination and necessary certification
3. Conduct epidemiological studies and surveys for assessment of health & morbidity profile of the workers, determinants of diseases, assessment of health needs, diseases surveillance, and Planning and implementation of prevention and control measures
4. Do data collection, compilation, tabular and graphical presentation, analysis and interpretation, applying appropriate statistical tests, using computer-based application

SUBJECT WISE SYLLABUS IN DETAILS:

Concept Map of the Syllabus:



TIME MANAGEMENT:

- **One Working Day: 10 AM-6 PM**
- **Number of Sessions per Working Day: 5**
- **Duration of One Session: 1 Hrs and 15 Minutes (Min)/ 1 Hrs and 30 Minutes (Max)**
- **Lecture, Tutorial and Practical Training: 40 Working Days (200 Sessions)**
- **Project Work: 10 Working Days (50 Sessions). The project work is an essential component of the curriculum, the AFIH delegates should be informed and sensitized about it from the very beginning of the course.**
- **Educational/Industrial Visits/ Specialty Clinical Exposure: 10 Working Days (50 Sessions)**
- **Total Effective Course Duration: 60 Working Days (300 Sessions) [Min-375 Learning Hours]**

STUDY SCHEME:

DOMAIN	NUMBER OF SESSIONS			
	LECTURE / GROUP DISCUSSION/PRESENTATION [L]	TUTORIAL/ DEMONSTRATION [T]	PRACTICAL [P]	TOTAL (200+50+50=300)
A) Fundamentals of Industry and Industrial Management	10	-	-	10
B) Occupational & Environmental Health	85	10	25	120
C) Industrial Safety	15	5	-	20
D) Industrial Hygiene	15	5	10	30
E) OSH Statutes and Standards	20	-	-	20
Lecture, Tutorial and Practical Training	145	20	35	200
Project Work	50			50
Educational/Industrial Visits & Specialty Clinical Exposure	50			50

Course contents In Details:

A. FUNDAMENTALS OF INDUSTRY AND INDUSTRIAL MANAGEMENT: L-10, T-0, P-0

ALLOTTED SESSIONS: 15 SESSIONS		
LECTURE (L)/ GROUP DISCUSSION/PRESENTATION	TUTORIAL (T)/ DEMONSTRATION	PRACTICAL (P)
10	0	0

1. FUNDAMENTALS OF INDUSTRY: L-5, T-0, P-0

What is Industry , its types and Sectors, Industries of India, Industrial Economics, Indices (GDP/GNP etc), The need for industries in country's development, The Factors of Production in industries (Labour, Land, Capital, Enterprise), What is Labour, Its types, issues, solutions, Organized and Unorganized labour issues, Migrant Workers, Seasonal Workers, Gig Workers, Industry as Organization, Its Hierarchy, the need of doctors in industry, Basic knowledge on the functioning of the different Industries, Interrelation for OSH with Industry's department of Safety, HR, Welfare, Commerce, Market, Trade Unions, Govt agencies, Community around industry, Importance of Occupational Health for Sustainable Development in Industries, Industry 1.0/2.0/3.0/4.0/5.0, Effect of technical advancement in industrial hazards

2. INDUSTRIAL MANAGEMENT FOR OCCUPATIONAL SAFETY AND HEALTH: L-5, T-0, P-0

General principles of Management, Management Theories, Components: Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting, Management Structure, Roles and Responsibilities, Authority, Information flow, Reporting Mechanism, Delegation of Power, Public Relation, Concept of productivity, Concepts of Material Management, inventory control & techniques, Concept of Quality, PDCA Cycle, principles of Kaizen, Total Quality Management, Assessment of training needs, Design & development of training programmes, Training methods and strategies, Training programmes for new entrants, Evaluation of training programmes, Communication, Principles, tools and techniques of Effective Communication, IEC & BCC, Occupational Health Audit, Incentives, motivation, leadership traits, skill and types

B. OCCUPATIONAL AND ENVIRONMENTAL HEALTH: L-85, T-10, P-25

ALLOTTED SESSIONS: 110 SESSIONS		
LECTURE (L) / GROUP DISCUSSION/PRESENTATION	TUTORIAL (T)/ DEMONSTRATION	PRACTICAL (P)
85	10	25

1. Concepts of Health & Diseases and History of Occupational Health: L-10, T-0, P-0

Definitions, Determinants of Health, Concepts of Health and Diseases, Basic socio-economic and demographic factors pertinent to occupational health, Occupational Sociology, History and development of Occupational Health, International and National Organisations of OSH (MoL&E, DGFASLI, AIIH&PH, ILO, WHO, CDC, ICMR-NIOH, ICOH, NIOSH etc), ILO Conventions, Recommendations, Ratifications, Status of occupational health globally and in India, Sustainable Development Goals, Epidemiology, Epidemiological triad, Theory of Disease Causation, Multifactorial Causation of Occupational Diseases, Association and Causal Relationship, Level of Prevention and Mode of Interventions, Role of Nutrition in Occupational Health. etc

2. Healthcare Delivery System for Community and Industry: L-10, T-0, P-0

Principle and Elements of Primary Health Care, Primary Health Care Approach in Occupational Health (Basic Occupational Health Service), Health Service in India, Role of Governments, Employers, Trade Unions and Employees in OHS, Reportable Diseases and Notifiable Diseases, Functioning of Occupational Health Centre, First Aid Services in Industries, Ambulance service, Medical emergency

response & planning, Role and Responsibilities during in Onsite & Offsite Emergencies, Triage and Reverse Triage, Health Programmes for Prevention of Communicable and Non-Communicable diseases, Hearing Conservation Programme, Prevention of Addiction, Rehabilitation, etc

3. Research Methodology and Biostatistics in Occupational Health: L-10, T-3, P-0

Methods of occupational health studies-descriptive studies, analytical studies, case control and cohort studies, experimental studies, Preparation of questionnaire, Measurements of Mortality and Morbidity: Incidence, prevalence, mortality rate, morbidity rate, man-days lost, absenteeism rate, sampling, sample size, sampling methods, standardization, concept of normal distribution, descriptive statics, inferential statistics, mean, median, mode, standard deviation, inter quartile range, concept of p value, significance testing, Chi2 testing, t- tests, correlation, Application of computers and statistical software of occupational health data analysis, representation of the research results in tables and diagrams, preparation of reports, Reference management, Plagiarism, Research Publication, Important Database and Repository for Occupational health Practice

4. Screening and Diagnosis for Occupational Health: L-10, T-2, P-0

Concept of Screening Tests and Diagnostics Tests, Sensitivity, Specificity, Accuracy, Precision, Positive Predictive Value, Negative Predictive Value, Biomonitoring and exposure assessment for occupational diseases, Occupational Toxicology, Occupational Health Surveillance, Different Diagnostics Modalities in Occupational Health, Imaging Modalities for Occupational Health, Evidence Based Decision Making for Occupational Health Practice, Pre-Employment Medical Examination, Periodic Medical Examination, Pre-Retirement/Exit Medical Examination, Special Medical Examination, Maintenance of health registers and records, Medical Certification to employees (employment, sickness, injuries, return to work) etc

5. Management of Occupational Disorders, Injuries, and Illness: L-25, T-5, P-20

List of Occupational Diseases as per ILO, List of Notifiable Diseases in Factory, Ports, and Mines, Medical Management of Diseases Caused by Chemical Agents: Toxic Gases, Vapours, Toxic Liquids, Metals, Solvents, Organochlorine and organophosphorus compounds, Hydrocarbons, Acids, Alkalis etc , Medical Management of Diseases Caused by Physical factors or Agents: Heat, Noise, Vibration, Humidity, compressed or decompressed Air, Electricity, Radiation, Electromagnetic Waves, Work at Height, Work at High Altitude, Work under Water, Medical Management of Diseases Caused by Biological Agents: Anthrax, Brucellosis, Leptospirosis, Tetanus, Tuberculosis, Hepatitis, HIV, Fungal Infections, Occupational diseases by target organ systems: Occupational Lung Diseases, Occupational Skin Disorder, Occupational Musculo-Skeletal Disorders, Occupational Cancers, Occupational Eye Disorders, behavioural toxicology, Occupational Injuries and Illness Classification, Management of Occupational Injuries and Emergencies, BLS, ACLS, Management of Insect, Animal and Snake Bite, Disability Assessment, etc

6. Environmental Health: L-5, T-0, P-2

Introduction and definitions in Environmental Health, Air Pollution and Workers Health, Air Quality Index, Water Pollution, Environmental Sanitation, Food Safety, Pests and Pesticides, General sanitation, purification of water, water quality assessment, Criteria of Potable Wholesome Drinking water, drinking water supply, Solid waste management, Bio-Medical Waste Management, Environmental Management System, etc

7. Work Physiology, Ergonomics, and Industrial Psychology: L-7, T-0, P-3

Work Physiology, Physical fitness, Heat Stress, Fundamentals of Biomechanics, Introduction to ergonomics, cumulative trauma disorders, stress performance, application of ergonomics in occupational health, anthropometry, principles of work station designing, Introduction to industrial psychology, occupational stress & its management, shift work, Occupational Mental and Neuro-behavioural disorders, occupational health disorders of psychological origin, etc

8. Important National Health Programmes and Recent Advancement in Occupational Health: L-8, T-0, P-0

Brief Introduction to National Health Mission (NHM), Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY), and Important National Programme for TB, HIV, Vector Borne Diseases, Integrated Disease Surveillance Programme (IDSP), National Programme for prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & stroke (NPCDCS), National Mental Health Programme, Recent Diagnostics in Occupational health, Adult Immunization, One Health Approach, Immunologic and genetic biomarkers in occupational health practice, Application of Artificial Intelligence in Occupational Health Practice, Aging and Work, Women at Work, Nanotechnology and Occupational Health, Industrial Automation and Occupational Health, Occupational Health Information Management System, Ethics in Occupational Health, Green House Gases, Carbon footprint, Climate Changes, etc

C. INDUSTRIAL SAFETY: L-15, T-5, P-0

ALLOTTED SESSIONS: 20 SESSIONS		
LECTURE (L)/ GROUP DISCUSSION/PRESENTATION	TUTORIAL (T)/ DEMONSTRATION	PRACTICAL (P)
15	5	0

Definition, Importance, Applicability, Accident causation, Accident and Injury Prevention, safety committee, Control of industrial heat, ventilation, noise, vibration, illumination & color, Radiation Safety, Fire Safety, Electrical Safety, Work Permit System, Safety during Work at Height and Confined Space, Accident investigation & Reporting, Fundamentals of Safety Audit, Introduction to Behavioral Based Safety (BBS), Hazard Identification, Risk Assessment & Mitigation (HIRAM), Case studies of following major accidents- Bhopal, Mexico, Flixborough, Seveso, Chernobyl and Feyzin disasters

D. INDUSTRIAL HYGIENE: L-15, T-5, P-10

ALLOTTED SESSIONS: 30 SESSIONS		
LECTURE (L)/ GROUP DISCUSSION/PRESENTATION	TUTORIAL (T)/ DEMONSTRATION	PRACTICAL (P)
15	5	10

Introduction to Industrial hygiene, organizing Industrial hygiene service, Hierarchy of Control, Concepts of safe working limits (TLV –TWA, STEL, PEL, REL, BEI, IDLH, LC 50, LD50, etc), MSDS, Workplace Airborne contaminants and monitoring, Assessment and monitoring of Industrial ventilation, heat & heat stress indices, humidity, noise, illumination & color, vibration, radiation, Respiratory and Non-Respiratory Personal Protective Equipment-Types, Standards and Selection

E. OCCUPATIONAL SAFETY & HEALTH STATUTES & STANDARDS: L-20, T-0, P-0

ALLOTTED SESSIONS: 20 SESSIONS		
LECTURE (L)/ GROUP DISCUSSION/PRESENTATION	TUTORIAL (T)/ DEMONSTRATION	PRACTICAL (P)
20	0	0

National Policy on OSH, Factories Act 1948 and The Factories Rules, The Dock Workers (Safety, Health & Welfare) Act and Regulations, Building and other construction work Act & Rules, Environmental Protection Act 1986-MSIHC Rules, CIMAH Rules, ESI Act, The Mines Act, Employees Compensation Act, Maternity Benefit Act, Insecticides Act, The Child and Adolescent Labour (Prohibition & Regulation) Act and Introduction to New Labour Codes, Introduction to National and International Standards, BIS, OISD, ISO, OSHA, NIOSH

PROJECT WORK: 50 Sessions

Project work is the essential component of the training programme. The Project work shall be original work in the field of occupational health domain involving workers as study participants in registered Factory, Mines, Dock Works, Construction Work and Plantation Work. Project work may include secondary data analysis of occupational health domain in the above-mentioned establishments. Narrative reviews, Systematic reviews, and case reports, etc. will not be considered as Project Work. The Project work should commence from the first working day of the third month of the programme in all the institutions all over India and duration shall be 10 working days. The project work shall be duly approved by the medical faculty of the respective institute. There shall not be any violation of ethical principles of biomedical and health research, and it is to be ensured by the respective institution. The final project work report should be with in 5000 words and printed hardbound copy with black cover and golden embossing. The project report shall be duly checked, approved, and duly signed by the medical faculty of the respective institute. At least two copies of the project report should be prepared out of which one shall be submitted to the Institute during final examination.

The Project Work should consist of following sections:

I. Title:

   Times New Roman, 14 font size, Bold, Line Spacing 1.5, Justify

II. Structured Abstract (Max 300 Words): Introduction, Methodology, Result and Discussion.

   Times New Roman, 12 font size, Line Spacing 1.5, Justify

III. Keywords (Max 5 Keywords in MeSH Terminology):

   Times New Roman, 12 font size, Italic

IV. Introduction:

   Times New Roman, 12 font size, Line Spacing 1.5, Justify, Single Column, A-4, Equations, Tables and Figures (colored) shall be numbered chronologically, starting from Introduction to Conclusion. In text citation as numbers in chronologically in square brackets [ ] as cross linked to corresponding reference

V. Review of Literature:

   Times New Roman, 12 font size, Line Spacing 1.5, Justify, Single Column, A-4

VI. Materials and Methods

   Times New Roman, 12 font size, Line Spacing 1.5, Justify, Single Column, A-4

VII. Results and Analysis

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VIII. Discussion

   Times New Roman, 12 font size, Line Spacing 1.5, Justify, Single Column, A-4

IX. Conclusion

   Times New Roman, 12 font size, Line Spacing 1.5, Justify, Single Column, A-4

X. References:

   In Vancouver format with in text citation as square brackets [ ]

Plagiarism Prevention: The project report prior to submission should be checked by the candidate for plagiarism. The similarity content should not exceed 10% & not more than 2% from any single source. In this regard, a self-declaration by the candidate shall be included in the report.

EDUCATIONAL/INDUSTRIAL VISITS & SPECIALTY CLINICAL EXPOSURE: 50 Sessions

I. Educational/Industrial Visits: 30 Sessions

At least 9 field visits must be conducted in registered factories specially in the industries involving hazardous process as mentioned in the First Schedule of the Factories Act, Construction sites, dock works (if nearby), mines (if nearby), Plantation work (if nearby) to study occupational health hazards, control measures and the functioning of occupational health services there. One educational visit may be conducted in any specialized or advanced center for management of occupational health problems or dealing with occupational rehabilitation services or occupational toxicity or occupational research organization.

II. Specialty Clinical Exposure: 20 Sessions

Specialty Clinical exposure in nearby ESI Hospitals/Any Tertiary Care Hospital/Medical Collage in the department of Respiratory Medicine/ENT/Eye/Dermatology/Orthopedics/Physical Medicine and Rehabilitation (PMR)/Community Medicine/Psychiatry or discussion of different topics by the specialists from the above departments to get exposure in recent advancement in the respective discipline with respect to occupational health issues.

N.B: A notebook is to be prepared by every AFIH delegate, containing brief description of educational/industrial visits and specialty clinical exposure and the same is to be submitted at the institute during examination.

TUTORIAL/DEMONSTRATION & PRACTICAL TRAINING: 55 Sessions

At the end of the training programme, participants should acquire the following practical skills:

OCCUPATIONAL AND ENVIRONMENTAL HEALTH: 35 Sessions

a. Medical examination - proficiency in collection of proper occupational exposure history, general examination, recognition and demonstration of physical finding, pre-employment/pre-placement, periodic, exit medical examination and special examination.
b. ILO International Classification of Radiographs of Pneumoconioses, CT scan for Occupational Lung Diseases
c. Lung function tests
d. Audiometry
e. Vision testing
f. E.C.G.
g. Bio-chemical & pathological investigations, routine & special
h. Research Methodology, Biostatistics, & Data Analytics
i. First Aids, BLS & ACLS, Use of AED
j. Evaluation of physiological work stress
k. Exercise stress test
l. Test for Vertigo
m. Techniques for different anthropometric measurements, biomechanics

INDUSTRIAL SAFETY: 5 Sessions

a. Practical/Video Demonstration of Machine Safety
b. Practical/Video Demonstration of Fire Fighting Equipment
c. Practical/Video Demonstration of Work at Height Safety Equipment
d. Case discussion Bhopal, Mexico, Flixborough, Seveso, Chernobyl and Feyzin disasters

INDUSTRIAL HYGIENE: 15 Sessions

a. Assessment of workplace airborne contaminants, Sampling, analytical techniques, and their interpretation.
b. Monitoring of workplace ventilation, heat, humidity, noise, illumination & color, vibration, radiation
c. Respiratory and Non-Respiratory Personal Protective Equipment

N.B: A notebook is to be prepared by every AFIH delegate containing brief description of the practical works and the same is to be submitted at the institute during examination.

GUIDELINES FOR THE TRAINING PROGRAMME

NOMENCLATURE OF THE TRAINING PROGRAMME/COURSE:

Three Month Duration Training Programme in Industrial Health. Upon successful completion of the training program, participants will be granted the title of Associate Fellow in Industrial Health, accompanied by a certificate.

ESSENTIAL ELIGIBILITY CRITERIA FOR ADMISSION:

1. Candidates in possession of recognised medical qualification as per the provisions of the National Medical Commission (NMC) Act, 2019 and the repealed Indian Medical Council (MCI) Act 1956, and
2. Have completed one year of internship period.
3. Possessing permanent registration certificate issued by the NMC/ the erstwhile Medical Council of India or State Medical Council to practice medicine in India and
4. Minimum Two years working experience (as on the date of publication of the information brochure cum application form) in any establishment or self-practice after completion of the compulsory internship period. The period spent on higher studies in the field of modern medicine i.e. recognised post graduate medical degree/diploma (MD/MS/DNB/Diploma) or an equivalent recognised medical qualification as per provisions of the NMC Act 2019 and the repealed Indian Medical Council Act 1956 shall be considered as working experience.

SELECTION CRITERIA FOR ADMISSION:

If the number of applicants who have fulfilled the essential eligibility criteria for admission as mentioned above, are more than the maximum approved intake capacity of that institute, then only the selection criteria (Objective Criteria based Merit List) as mentioned below shall be followed,

After completion of the compulsory internship period,

1. Two (2) mark will be given for each completed year of working experience in Factory, Mines, Dock Works, Construction Work, and Plantation Work
   and
2. One (1) mark will be given for each completed year of working experience other than Factory, Mines, Dock Works, Construction Work and Plantation Work or self-practice or period spent on higher studies in the field of modern medicine i.e. recognised post graduate medical degree/diploma (MD/MS/DNB/Diploma) or an equivalent recognised medical qualification as per provisions of the NMC Act 2019 and the repealed Indian Medical Council Act 1956
3. TIE PRINCIPLES –Wherever two or more candidates have secured equal aggregate marks, these tie(s) is/are resolved in accordance with the principles as mentioned below,
   - Priority-1: Age-Senior will be in the upper order of merit.
   - then Priority-2: Date/Year of Completion of the Internship-Earlier the date/year of completion of internship will be in the upper order of merit.

Training Institutions and the number of courses per year and participants:

- Central Labour Institute and Regional Labour Institutes (Chennai, Faridabad, Kanpur, Kolkata and Shillong) under DGFASLI will run the training programme.
- The number of sessions to be conducted ordinarily once or twice in a year depending upon number of candidates and other resource availability. The respective institutes may decide the date of commencement of the course as per their convenience.
    - 1st Session: Between January to June
    - 2nd Session: Between July to December
- The maximum intake capacity for the institutes of DGFASLI for Central Labour Institute, Mumbai is 100 seats, whereas for Regional Labour Institutes Chennai, Faridabad, Kanpur and Kolkata and Shillong is 50 seats each at the respective institute, for every session to be conducted.

Qualifications for the Faculties and Examiners:

Institutions/organizations must have sufficient faculties to impart the training of topics as per the Competency-Based Course Curriculum.

Training participants to faculty/teacher ratio of 50:1, i.e. 50 training participants for every one teacher/ Faculties in Occupational Health, Safety, Hygiene and other relevant discipline as per curriculum should be ensured by the respective training institute.

Medical Discipline:

Recognised post-graduate medical qualification (MD/MS/DNB/Diploma) in modern medicine as per the National Medical Commission Act 2019 and the repealed Indian Medical Council (MCI) Act 1956 in the respective branch of medical science as per the course curriculum.

Or

A Factory Medical Officer/ Medical Officer with a minimum of 10 years of working experience in Factory/Mines/ Dock/Building or other Construction Work/Plantation works/ESIC/AERB.

Or

A Teacher/Faculty member in a medical college/ Institute of Post Graduate Level Medical Education in the respective branch of the medical science

Or

Current or Previously, Officer in the level of Dy. Director (IM) and above in the DGFASLI or Assistant Director (OH) or Above in DGMS

Or

Current or Previously, A Medical Inspector of Factories/Mines and other establishments as appointed by Central or State government as applicable.

Or

Current or Previously, A medical professional in the rank of Scientist-C and above or equivalent in Central or State Government-run research institutions on occupational health-related discipline.

Non-Medical Discipline:

Faculties for non-medical topics should hold minimum criteria as below.

Master's degree in the respective field as per the curriculum with minimum 5 years of experience in the field,

Or

Bachelor's degree in engineering/technology with minimum working experience of 5 years in the respective field as per the curriculum.

Or

Current or Previously, Officer in the level of Additional Assistant Director (or Equivalent) and above in the DGFASLI/DGMS.

Or

Current or Previously, Scientist-C and above or equivalent in Central or State Government run research institutions on occupational Safety/Health/Hygiene/Ergonomics/Toxicology/Psychology /other relevant discipline.

Fees Structure:

Fees for this training programme will be Rs. 25000 per participants.

The expenses towards Food, Stay, Industry Visit, Project Work, Term Work, examination fees, Lab Reports Books, Stationeries, copies of study materials, handouts, lectures/ notes and other assignments, etc as part of the curriculum have to be borne by the candidate himself/herself/sponsoring organization.

The fee structure may be revised from time to time as decided by the competent authority of DGFASLI.

Stipend/Incentive/Bond Posting:

There will be no provision for stipend/incentive/bond posting to training participants.

Teaching - Learning Methods:

Principles

Acquisition if practical competencies being the keystone of any health related training programme. AFIH training should be skills oriented. Learning in AFIH programme should be essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Teaching Learning methodology:

Teaching methodology includes:

1. Didactic lectures by the experts
2. Presentations and Group Discussions on topics as per the syllabus
3. Self-Directed Learning
4. Hands on training during tutorials and practical sessions
5. Practical or Video based Demonstration.
6. Supervised Project Work
7. Supervised Industrial/Educational Visits
8. Specialty Clinical Exposure/Discussion

Essential Physical Infrastructure, Equipment and Staff to Run the Course:

- Lecture Room or Rooms with a minimum of 25-50 seating arrangement in each room with proper illumination, adequate ventilation system with comfortable temperature and humidity level.
- Comfortable chairs and desks or tables for the students and faculties/teachers.
- Enough space to allow for movement and group activities.
- Audio Visual arrangement in the Lecture Rooms: Like Classroom Board, Multimedia projection System or Smart Interactive Teaching Board, Computer, and Internet connection, Public Address System or Sound Amplification System.
- Practical classrooms/Labs with adequate space and facilities for conducting the practical/lab works in Medical, Industrial Hygiene, safety, Environmental Engineering, Work Physiology, Ergonomics etc. as per the course curriculum.
- Adequate infrastructure for imparting training ILO International Classification of Radiographs of Pneumoconioses (Latest Version)
- Library: With adequate number of books and journals (online or offline) as per the course curriculum and as suggested by the faculties. A computer with internet connection should be available in the library.
- Availability of the adequate number of computers with internet connection for the training participants
- Faculty rooms with individual adequate workspaces, and functioning computers with internet connection. Waiting room for the guest faculties.
- The Institute should provide adequate working space for the office staff, Scientific Assistants/Lab Assistants, Librarian with suitable furniture, storage and computers with internet facilities.
- Sufficient Number of Personnel including office staff, Scientific Assistants/Lab Assistants, Librarian and other support stuff to be ensured for effectively manage and support the course.
- Adequate Supply of Wholesome Potable Drinking Water

- Adequate provision for latrines and urinals separates for each gender.
- Canteen facilities or similar arrangements
- Any other suitable facilities as available to similar reputed training institutes
- Equipment as mentioned below to be available at the institute or suitable arrangements to be made to impart Practical training as per the course curriculum.

S. No.	Equipment
1.	Orthorators (Vision tester/screener)
2.	Pure Tone Audiometry
3.	Lung Function Test/Spirometer
4.	ILO Radiographs (Latest Version)
5.	ECG Machine
6.	Dust Counting equipment
7.	Sound level meter
8.	Lux Meter
9.	General equipment for routine blood,urine, stool, sputum examination
10.	CPR Training Mannequin with AED Simulator and Ambu Bag with Other First Aid Equipment
11.	Work Environment monitoring tools for common physical and chemical hazards, Sample Collectors, Personal samplers, microscope for dust counting, direct reading equipment, different types of Personal Protective Equipment for demonstration (Respiratory / Non-respiratory)
12.	Heat stress measuring equipment
13.	Velometer
14.	Equipment for Anthropometry
15.	Demonstration of Safety measures and Personal Protective Equipment etc.

Certification Examination Eligibility and Assessment Methodology:

- Candidates must attend the classes regularly and shall have minimum of 75% attendance inclusive of theory, practical, industrial visit, project work etc.
- Candidates with shortfall of 75% attendance will be debarred from appearing the assessment examination and shall not be allowed to appear the examination in future. However, such candidate may re-apply for the course, he/she has to undergo the complete procedure of the admission to the course and shall be eligible to appear for the examination only after undergoing the complete course again with 75% attendance.
- Assessment examination schema and passing criteria is mentioned below (Assessment Section).
- Preparation of the Question Paper, Appointment of the Examiners, Assessment Examination and evaluation and publication of the result is the responsibilities of the respective institute.

Institute Level Responsibilities:

- Decision to conduct the course, date of commencement of the course, Publication of Information brochure, application form, scrutiny of the applications, selection, conducting the course as per the curriculum, assessment examination, Preparation of the Question Paper, Appointment of the Examiners, Conducting the Assessment Examination and evaluation and publication of the result, and issuing the certificate, maintenance of the certification records and verification of the same is the responsibility of the respective training institute. Any other administrative and technical issues shall be dealt with the respective training institute in line with any other regular short and mid duration training programme conducted by DGFASLI.

ASSESSMENT:

SUMMATIVE ASSESSMENT, i.e.at the end of the AFIH training

The summative examination would be carried out as per below mentioned schema.

1. Theory Examination:

The examination shall be in MCQ Type: 100 marks*.

Every correct answer will be of 1 mark and there will be no negative marking for wrong answer.

Marks Distribution (Suggestive) in the Final Theory Examination:

Domain	Marks
A) Fundamentals of Industry and Industrial Management	05
B) Occupational & Environmental Health	50
C) Industrial Safety	10
D) Industrial Hygiene	15
E) OSH Statutes and Standards	20
Total	100

*Candidates securing 50 marks shall be declared to have passed in this section (Theory).

2. Practical/Oral/Clinical/Project Work examination: 100 marks**

SECTION: i (50 Marks)

I. Practical/Demonstration: 40 marks
II. Evaluation of Practical Notebook and Visit Workbook: 10 marks.

SECTION: ii (50 Marks)

I. Oral/Clinical Examination: 40 marks
II. Evaluation of Project Work: 10 marks

**Candidates securing minimum of 50 marks [25 marks in Section: i and 25 marks in Section: ii separately] shall be declared to have passed in this section (Clinical/Practical and oral examination)

N.B.: To qualify for the award of certificate, a candidate must pass in both the sections as mentioned in 1 (Theory Examination) and 2 (Practical/Oral/Clinical/Project Work examination) separately.

N.B.: Preparation of the MCQ type question papers and evaluation of the answer sheet and appointment of at two external examiners of medical discipline (One for Section-i and another for Section-ii) for Practical/Oral/Clinical/Project Work examination and publication of the result will be done by the respective institute.

N.B.: If a candidate fails in one session or not being able to appear in the same session due to unavoidable circumstances, he/she may be allowed to re-appear in the examination conducted next session. If he/she fails in that examination too, he/she will not be allowed to appear the examination in subsequent session. However, such candidate may re-apply for the course, he/she has to undergo the complete procedure of the admission to the course and shall be eligible to appear for the examination only after undergoing the complete course again with 75% attendance.

RECOMMENDED READING

Books (latest edition)

1. Parkes WR - Occupational lung disorders, Butterworths, London.
2. International Labour Organisation – Encyclopaedia of Occupational Safety and Health, Geneva.
3. National Institute of Occupational Safety and Health – Occupational respiratory diseases, US Dept. of Health and Human Service, Washington D C (Revised), USA.
4. World Health Organisaion - Harmful exposure to mineral dusts, World Health Forum, 15(2).
5. Gardner AW - Current approaches to Occupational Health 2, John Wright & Sons Ltd, Bristol, London, Boston.
6. International Labour Organisation - Guidelines for the use of ILO International classification of Radiographs of Pneumoconiosis, Geneva.
7. Hunter's Diseases of Occupations, Hodder and Stoughton, London/Toronto.
8. Occupational Health - Harrington and Gill, Blackwell Scientific Publication, Oxford.
9. Epidemiology of Occupational Health – WHO, European Series No 20.
10. Monitoring for Health Hazards at Work - Gill and Ashton, Grant Mclntyre, London.
11. Recent Advances in Occupational Health - MacDonald, Churchill Livingstone, London.
12. Occupational Diseases: A Guide to Their Recognition - National Institute of Occupational Safety and Health, NIOSH, Cincinnati.
13. Occupational Health Practice - Schilling, Butterworths, London.
14. Current Approaches to Occupational Medicine - Ward Gardner, J. Wright, Bristol.
15. Occupational Medicine - Zenz, Yearbook Publication, Chicago.
16. Epidemiology in Medical Practice - Barker and Rose, Churchill Livingstone, Edinburgh.
17. Occupational Epidemiology - Monson, CRC Press, Boca Raton.
18. Early Detection of Occupational Diseases -WHO, Geneva.
19. Epidemiology: Principle and Methods – Mac Mohan and Pugh, Little Brown, Boston.
20. Park's Textbook of Preventive and Social Medicine- Banarsidas Bhanot Publishers
21. Oxford Handbook of Occupational Health, OUP-UK
22. Harrison's Principles of Internal Medicine, Mc Graw Hill
23. Industrial Safety Handbook-Handley- Mc Graw Hill
24. Industrial Hygiene Simplified, Spellman, Bernan Press
25. Patty's Industrial Hygiene, Wiley
26. Occupational and Environmental Medicine by Joseph Ladou
27. Any other books as suggested by the faculties

Journals and Important Organizations & Repositories:

1. Safety and Health at Work, https://www.sciencedirect.com/journal/safety-and-health-at-work
2. Journal of Occupational Health, https://onlinelibrary.wiley.com/journal/13489585
3. Occupational and Environmental Medicine, https://oem.bmj.com/
4. Occupational Medicine, https://academic.oup.com/occmed
5. Indian Journal of Occupational and Environmental Medicine, https://www.ijoem.com/
6. International Journal of Occupational Medicine and Environmental Health, https://link.springer.com/journal/13382/volumes-and-issues
7. PubMed, https://pubmed.ncbi.nlm.nih.gov/
8. International Labour Organization, https://www.ilo.org
9. International Training Centre-ILO, https://www.itcilo.org/
10. World Health Organization, https://www.who.int/
11. Occupational Safety and Health Administration, USA, https://www.osha.gov/
12. European Agency for Safety and Health at Work, https://osha.europa.eu/en
13. Agency for Toxic Substances and Disease Registry (ATSDR), https://www.atsdr.cdc.gov/
14. Centre for Disease Control, USA, https://www.cdc.gov/
15. International Agency for Research on Cancer, https://www.iarc.who.int/
16. International Commission on Occupational Health, https://www.icohweb.org/
17. National Health Mission, https://nhm.gov.in/
18. National Digital Library of India, https://ndl.iitkgp.ac.in/
19. CSIR-Indian Institute of Toxicology Research, http://iitrindia.org
20. Central Pollution Control Board, https://cpcb.nic.in/
21. All India Institute of Hygiene and Public Health, MOHFW, GOI, http://aiihph.gov.in/
22. ICMR-National Institute of Occupational Health, https://www.nioh.org/
23. Online Learning Platform by Government of India, https://swayam.gov.in/
24. Directorate General Factory Advice Service and Labour Institutes, https://dgfasli.gov.in
25. Ministry of Labour and Employment, GOI, https://labour.gov.in/
26. Any other journals or websites as suggested by the faculties.

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