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Sistema centralizzato di iscrizione agli esami

Programma

Università di Pisa APPLIED HYGIENE

ANNALAURA CARDUCCI

Anno accademico 2020/21

CdS BIOLOGY APPLIED TO BIOMEDICAL

SCIENCES

Codice 045FF

CFU 6

Moduli Settore/i Tipo Ore Docente/i

IGIENE APPLICATA MED/42 LÉZIONI 48 ANNALAURA CARDUCCI

Learning outcomes

Knowledge

The student will acquire the fundamental skills of quality management and risk.

Assessment criteria of knowledge

The student will be assessed with a final oral exam.

Skills

The student will acquire the practical knowledge of general hygiene principles of quality management and risk to human health related to the life and work settings and to foods.

Assessment criteria of skills

During the oral exam students will be encouraged to solve problems related to risk analysis and risk management.

Behaviors

Students will acquire skills in the management of chemical and biological risk in several contexts.

Assessment criteria of behaviors

During the oral exam, the student will be assessed in the use of risk analysis methods.

Prerequisites

Hygiene

Teaching methods

Lectures and seminars with slides. Site elearning used to upload slides. Communication with students through email.

Syllabus

Part I: PRINCIPLES AND METHODS

Primary prevention, Health determinants, Agenda 20-30, basic concepts and definition of risk analysis

RISK ASSESSMENT:

General principles and phases

1. Hazard Identification and characterization

CHEMICAL HAZARDS:

Classification, origin, diffusion, health effects: POPs (pesticides, PCB, etc.), PTS (heavy metals, PAH), endocrine disruptors, microplastics, medicines and antibiotics, disinfectants, biological toxins (algal biotoxins, cyanotoxins, mycotoxins)

Dose-response relations for toxic and cancerogenic chemicals

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PHYSICAL HAZARDS:

Classification, origin, diffusion, health effects: Ionizingradiation, electromagnetic waves, noise

BIOLOGICAL HAZARDS:

Classification aimed at the risk assessment

Characteristics and epidemiology: enteric pathogens (hepatitis A and E virus, norovirus, salmonellae), respiratory pathogens (legionellae), opportunistic pathogens, antibiotic-resistant bacteria, emerging pathogens (SARS Cov-2)

Dose-response relations for infectious agents

1. Exposure assessment

General principles

Chemicals: environmental monitoring, biomarkers Physical agents: environmental monitoring, biomarkers

Biologici agenti: environmental monitoring according the transmission chain

The exposome

1. Risk Characterization (estimate).

Direct and indirect methods

Qualitative estimate, risk matrices

Chemicals, models

Physical agents, models

Biological agents, QMRA

RISK CONTROLS:

General principles, acceptable risk, Deming wheel

Risk Control methodology HACCP: phases and methods

RISK COMMUNICATION:

Risk perception: Outrage and its determinants

Health literacy

Communication plans, Social Marketing

Part II: APPLICATIONS AND NORMS ENVIRONMENTAL RISK ANALYSIS

Legislation evolution

Risk and Impact assessment

Environmental and Health Impact Assessment and application models

Water: Water safety plan, drinking water and eater plants, bathing waters, water reuse, aquaculture

OCCUPATIONAL RISK ANALYSIS

DLgs 81/2008 and legislation evolution

Safety organization: Organizzazione della sicurezza: roles and functions

Risk Assessment Document

Occupational Risk Control: collective and individual measures

Occupational risks categories

Chemical Risk: REACH and CLP regulations

Physical Risk: radiazioni e rumore

Biological Risk: peculiarities and evolution

Biological risk in wastewater treatment plants and in solid waste management

Occupational risks in laboratory:

Assessment and control

Risks from GMMO

Risks from SARS-Cov 2

Occupational risk assessment from a gender perspective

FOODS RISK ANALYSIS

Legislation evolution

Food related risks: assessment and control

Food preservation

Food production chain and HACCP

RISK ANALYSIS AND QUALITY:

Definitions and norms (ISO, CEN, UNI)

Accreditation and Certification

Quality in laboratories

Bibliography

Recommended textbook: "Professione igienista" Giorgio Gilli, 2010. Casa Editrice Ambrosiana

Non-attending students info

There are no changes to non-attending students about the program, examination procedures and

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bibliography

Assessment methods

The oral test consists of an interview between the candidate, the teacher and other collaborators of the lecturer. The oral test is not accepted if the candidate repeatedly show the inability to properly learn the basics of the course and put parts of the program report and these notions to respond correctly.

Work placement

The course face many topics include in the State examination for the Biologist Profession.

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