

AUDI 31383- Environmental Audiology

Status	Optional (A)
No of Hours	45 hours
No of Credits	3
Learning Outcomes	<ul style="list-style-type: none"> • Explain basic concepts in relation to noise, hearing conservation, legislation. • Describe the procedures of noise measurement • Explain the effects of noise. • Outline the evaluation of noise induced hearing loss and issues related to noise levels.
Methods of Teaching and Learning	Lectures
Module content	<p>Unit 1</p> <ul style="list-style-type: none"> • Noise in the environment <ul style="list-style-type: none"> - Definition of noise - Sources: industrial, community, music, other - Types: steady, non-steady • Auditory effects of noise <ul style="list-style-type: none"> - Historical aspects - TTS, recovery patterns - PTS - Histopathological changes - Effects of noise on communication, SIL, PSIL, AI, SII - Noy, PNdB, PNL, EPNL, NC curves, NRR, SNR • Non- Auditory effects of noise <ul style="list-style-type: none"> - Physiological/somatic, psychological, stress, sleep, audio-analgesia, effects on CNS and other senses - Effects of noise on sleep - Effects of noise on work performance <p>Unit 2: Audiometry in Noise Induced Hearing Loss (NIHL)</p> <ul style="list-style-type: none"> - Puretone audiometry: Baseline evaluation, periodic monitoring, correction for Presbycusis. - Immittance evaluation - Evoked response audiometry - OAEs - Tests for susceptibility <p>Unit 3: Noise and vibration measurement</p> <ul style="list-style-type: none"> - Instrumentation (SLM, Dosimeter- Calibration & considerations during measurement)

- Procedure of noise measurement: indoor, outdoor, ambient, traffic, industrial, community and aircraft noise
- Variables affecting measurement
- Reporting results of noise measurement

Unit 4: Hearing conservation

- Need for hearing conservation, steps in hearing conservation
- Noise control: Administrative, engineering: at source, in the path, at the receiver, other
- Hearing protective devices (HPDs)
 - Types: earplugs, ear muffs, special hearing protective devices, musician's ear plugs, advantages and disadvantages of each type
 - Properties of HPDs
 - Evaluation of attenuation of HPDs
 - Oregon Health and Science University Dangerous Decibels Program

Unit 5

- Legislations related to noise
- Damage Risk Criteria (DRC):
 - Historical aspects
 - Use of TTS and PTS in derivation of DRC
 - Parameters included in establishing DRC
 - CHABA, AFR 160-3, ASA-Z 24.5, OSHA, EPA, Sri Lankan noise standards, NIOSH
 - Damage risk contours
- Claims for NIHL: Fletcher point eight formula, AMA method, AAOO formula, California variation, Factors in claim evaluation, Variables in hearing evaluation

Assessment

SEQ 100% (3 hrs)