**Subject: The Science of Hotel Engineering**

**Subject Code : HS 206**

**Teaching Scheme per week Examination Scheme**

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| **Theory Lecture Hours Tutorial Total Theory Marks Duration Internal Marks TotalMarks** |
|  3 1 4 40 2 Hours 10 50 |

**Rationale:**

The subject will provide information regarding the basic services and different types of systems in hotel

industry. This will help the students to understand plan, co-ordinate and integrate the functions of engineering

departments for overall operations and assist in the management of hotel.

**No of**

**Lectures**

**Chapter-1 Maintenance & Replacement Policy:06**

1.1. Importance of maintenance dept. in Hotel Industry.

1.2. Organization of maintenance Department in 3/4/5 star hotel.

1.3. Duties & responsibility of chief Engineering of a hotel.

1.4. Types of maintenance with examples of each (Advantages & Disadvantages).

Break down /corrective

Preventive

Predictive

1.5 Kitchen equipment (Convention Oven, Microwave, Steamers, Deep fat Fryers,

Refrigerators, Dish washing Machine)

1.6. Reasons for replacement of equipment.

1.7. Replacement factors

1.8. Contract of Maintenance; Definition &procedure, types. Advantages & disadvantages

**Chapter 2 Refrigeration:05**

2.1 Unit of refrigeration

2.2 Vapour compression Refrigeration system (Block diagram)

2.3 Absorption refrigeration system (Block diagram)

2.4 Domestic Refrigerator, defrosting, Need, Methods, Maintenance of refrigerator.

2.5 Ammonia as a refrigerant.

**Chapter 3. Air-conditioning 03**

3.1 Factors affecting comfort AC (supply of oxygen, removal of heat &moisture, proper air circulation, pure

air)

3.2Types of AC systems: CentralAC, Unitary AC.AC equipment:Window AC Walk in freezer, cold storage.

**Chapter 4 Pollution & Control 06**

4.1 Air pollution.

4.1.1 Sources of air pollution in hotels

4.1.2 Control of air pollution

4.1.3 Govt. stipulated conditions for air pollution.

4.2 Water pollution.

4.2.1 Water pollution sources in Hotels.

4.2.2 Control methods

4.2.3 Govt. stipulated conditions for water pollution

4.3. Waste Disposal

4.3.1. Controlling methods

4.4. Noise pollution control.

4.4.1. Sources of noise in Hotel & its unit.

4.4.2. Introductory control methods.

4.4.3. Environmental Degradation, Global warming and methods of Conservation. Concept of Recycling

**Chapter 5.Water and Sanitation. 07**

5.1 Water purification methods.

5.2 Various plumbing fixtures.

5.3 Types of sanitary traps and their applications.

5.4 Types of water closets and flushing.

5.3 Types (Indian, Western & Anglo Indian)

**Chapter 6.Fuels and Electricity. 05**

6.1 Fuels (Solid, Liquid & Gas)

6.2 Importance of Earthing.

6.3 Electrical safety devices such as fuse, circuits’ breaker.

6.4 Electrical safety checklist

6.5 Electric wires and types of wiring

6.6 Calculation of electricity bill.

**Chapter 7. Energy conservation 04**

7.1 Importance of energy conservation.

7.2 Simple methods of Energy conservation in hotel

7.3 Use of solar energy in hotels.

**Chapter 8. Audio visual equipments : 06**

8.1. Various audio visual equipment used in hotel

8.2. Care and cleaning of overhead projector, slide projector, LCD and power point presentation units

8.3. Maintenance of computers:

8.4. Care and cleaning of PC, CPU, Modem, UPS, Printer, Laptops

8.5. Sensors – Various sensors used in different locations of a hotel – type, uses and cost effectiveness

**Chapter 9. Safety in hotel Industry.06**

9.1 Classification of fire, symbols.

9.2 Methods and types of fire extinguishers.

9.3 Various securitysystems for hotel (Parking, Guest Area, Room).

9.4 Transport Systems. (Elevators, Escalators)

Types& Uses of elevators, Passenger service, Freight elevators, Dumbwaiter ,Sidewalk elevators

Stage lifts , Vehicle elevators , Residential elevator, Paternoster Scissor lift ,

Rack-and-pinion elevator Material handling belts and belt elevators Passenger elevators, freight

elevators

Escalators - Design, components, and operation

There should be 4 Demonstrations / Field Visits.

1. Refrigerator/VCC system in Hotel

2. Cold storage/ walk in chiller

3. AC/ Window AC

4. Safety systems

**Total 48**

**Note:** Glossary of Terms

Students should be familiar with the glossary of terms pertaining to above mentioned topics

**Reference Books**

1. Management of maintenance & Engineering Systems in Hospitality Industries – by Frank D.

Borsenik, John Willey & Sons.

2. Industrial Organisation and Management by O.P. Khanna

3. Refrigeration & Air Conditioning by Domkondwar

4. Hotel Maintenance by Arora