

<b>2AR558 Environmental Science &amp; Services – III</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
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<b>Learning Outcome</b>	<ul style="list-style-type: none"> <li>• Student will understand principles of artificial light &amp; electrification</li> <li>• Student will learn the methods of Heating &amp; cooling devices for natural and artificially ventilated building design</li> <li>• Students will learn the principles of fire fighting</li> </ul>
<b>Content</b>	<p><b>Artificial light, Electrification &amp; Communication Network</b>  <b>Basic electrical supply &amp; distribution to the building, alternate supply &amp; Power connections. Various components &amp; elements of layouts as per use, lifesaving auto-cut circuits &amp; other fixtures. Communication systems like fax, telecom, EPABX, alarm, audio-video monitoring, etc. &amp; their layouts. Criteria of designing of various communicating service layouts</b></p> <p><b>H.V.A.C. [Heating, Ventilating, Air-conditioning and cooling]</b>  <b>Mechanical thermal controls, its type, effects of it on heating, ventilating, air-conditioning or cooling an enclosed space. Air-conditioning or cooling systems, various types in practice, chilled water cooling system- air handling package unit &amp; their installation, demand and consumption as per use &amp; volume of space. Supply plants and service layouts, supply and return air's ducting and Channeling systems, calculations for consumption and basic sizes of Components</b></p> <p><b>Fire fighting &amp; Protection</b>  <b>Study of fire fighting regulations, fire alarming &amp; extinguishing system, fire hydrants-their types, location, spacing, distance &amp; specifications. Fire resistance of different building materials, designing of fires resistant door, gangway, and stair &amp; lift block for escape. Case studies of service and escape layouts of building for fire protection system &amp; requirement.</b></p>

**References:**

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3. Sugarman, Samuel C.Testing and balancing HVAC air and water systems.Lilburn:Taylor & Francis,2014 Classics,Jan 2007
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5. Roberts, Victor & Krepchin, Ira Eds. lighting : technology atlas Book. Colorado :Platts research and consulting., 2005
6. Howell, Ronald H. & others. Principles of heating ventilating and air conditioning : a textbook with design data based on the 2009 ASHRAE handbook - fundamentals . Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 2009