

## MINIMUM CORE SUBJECT AREAS: BUILDING SERVICES ENGINEERING

AREA	SUBJECTS / DESCRIPTION	RECOMMENDED CONTACT HOURS
<b>All areas below are considered core for Building Services Engineering with recommended hours specified.</b>		
<b>Courses should be designed at undergraduate or postgraduate level.</b>		
<b>1. Heating, Ventilation and Air-Conditioning (HVAC)</b>	- selected topics such as psychometry; thermal comfort; thermal load calculations; ventilation design; HVAC systems and equipment; air duct design and space air diffusion; refrigeration systems	30
<b>2. Electrical Services</b>	- selected topics such as power supply and distribution; load estimation; electrical safety and protective devices; earthing and bonding systems; emergency and standby power; testing and code requirements	30
<b>3. Fire Services</b>	- selected topics such as fire characteristics and hazards; fire safety and code requirements; water-based systems; gas-based systems; fire detection and alarm systems; smoke control and fire engineering approach	30
<b>4. Utility Services</b>	- selected topics such as plumbing engineering; water supply systems; sanitation and drainage systems; steam systems; fuel gas supply; telecommunication services; extra low voltage systems; vertical transportation	30
<b>5. Lighting Engineering</b>	- selected topics such as light and colour; principles of vision; human eye; light sources and luminaires; lighting design and calculations; daylighting design; lighting energy management	30
<b>6. Project and Engineering Management</b>	- selected topics such as building contract administration; project planning and control; tendering processes; site organization and safety management; dispute resolution; decision making; engineering management	30