

MINIMUM CORE SUBJECT AREAS: INFORMATION ENGINEERING

AREA	SUBJECTS / DESCRIPTION	RECOMMENDED CONTACT HOURS
A recommendation of 40 hours each in 6 out of 9 areas below.		
1. Data structure and algorithms	- selected topics on abstract data types, trees, priority queues, sorting, graph algorithms, analysis of algorithms, etc.	40
2. AI and Data Engineering	- Selected topics on database, data modelling, data analysis techniques, big data, artificial intelligence, machine learning and deep learning etc.	40
3. Computer Programming	- selected topics on Problem Solving and Programming, Internet Applications Development, Mobile Applications Development	40
4. System Architecture and Organization	- selected topics on Computer Organization, Computer Architecture, Operating Systems	40
5. Software and Systems Engineering	- selected topics on software engineering processes, software design methodologies, system integration, software testing and maintenance, software quality management, software project management, etc.	40
6. Network Computing	- selected topics on computer networks, digital networks, distributed systems, Internet of Things, etc.	40
7. Information Security and Management	- selected topics on cryptographic algorithms, Internet security, e-commerce protocols, security management, data privacy and data protection, related statutory / regulatory compliance, etc.	40
8. Digital Communications	- selected topics on digital information communications, mobile systems, telecommunications switching and networking, etc.	40
9. Signal Processing	- selected topics on algorithms in signal processing such as Fast Fourier transform and finite impulse response filter etc., image / video coding and processing, etc.	40