

Green IT (ICT) (Accredited by British Computer Society)

1. What is Green IT? An Overview (4 hrs)*

1.1. Understand the overall need for an organization to adopt a Green IT strategy. (30 minutes)

- The reality of climate change and over-population
- A brief understanding of climate change science
- Consumption of precious resources such as oil, gas and water
- The effect of poor and unsustainable working practices
- The effect of hazardous waste use and disposal

1.2. Provide an understanding of the historic development and context of the Kyoto Protocol. (30 minutes)

- The Kyoto Protocol – and historic background
- The formation of the International Panel on Climate Change
- The Rio Earth Summit
- The UN Framework Convention on Climate Change and IPCC
- Further rounds of COP (Copenhagen, Cancun, etc.)

1.3 Understand the definition of 'Green IT'. (30 minutes)

- The key elements of Green IT
- Commonly accepted definitions
- IT as an energy consumer
- IT as a green 'enabler'
- The concept and dangers of 'Green Wash'

1.4. Identify and understand an organization's external drivers and opportunities for greening its IT. (30 minutes)

- Political drivers
- Environmental drivers
- Social drivers
- Legal drivers
- Economic drivers

1.5 Identify and understand the internal drivers, opportunities and benefits of adopting a Green IT strategy for both an organization and its IT service provider(s). (30 minutes)

- Cost & Operations
- Marketing/PR
- Culture

- 1.6. Understand the main goals of government legislation and voluntary initiatives pertaining to Green IT. Only international contexts will be examined but an overview must be given of legislation, standards and initiatives that are pertinent to a candidate's local region. (60 minutes). An additional 30 minutes is recommended for non-examinable sections.

International standards and initiatives

Including:

- ISO14000 series (energy measurement)
- Energy Star
- EPEAT
- UN ITU

International voluntary initiatives

Including:

- PUE/DCiE (From The Green Grid)
- SMART 2020 (From The Climate Group)- WRI

European standards/initiatives (Will not form part of the final examination)

Including:

- Directive on Restriction of Hazardous Substances (RoHS)
- EU Eco Design of Energy Using Products (EuP) Directive
- EU Eco-labeling legislation
- EU ETS and CCA
- EU WEEE directive
- EU Voluntary Codes of Conduct for Data Centre Energy Efficiency, Broadband Services and External Power Supplies
- ECMA (European Computer Manufacture Association) green criteria for IT products
- Blue Angel green criteria for IT products

UK legislation/standards/initiatives (Will not form part of the final examination)

Including:

- BSI PAS 2050(product/service lifecycle foot-printing) & 2060 (carbon neutrality)
- UK Climate Change Bill
- UK Energy Bill
- UK Carbon Reduction Commitment Energy Efficiency Scheme
- Energy Performance of Buildings Directive and UK Regulations
- Batteries and Accumulators Directive
- UK government green IT strategy and best practices
- UK Government Buying Standards (GBS)

US/North American legislation (Will not form part of the final examination)

Including:

- American Clean Energy and Securities Acts
- Clean, Low-emissions, Affordable New Transportation Efficiency Act
- US Mayors Climate Protection Agreement
- Other relevant State legislation

Australian legislation (Will not form part of the final examination)

Including:

- Carbon Pollution Reduction Scheme
- Mandatory Renewable Energy Target
- The Hazardous Waste Act
- Other relevant State legislation

2. Internal assessment of your organization: where are we now? (11hrs)*

2.1. Gain an understanding of how to create a Green IT policy. (60 minutes)

- The role of a Green IT policy
- The importance of a Green IT policy
- The alignment of Green IT policy with an organization's environmental, sustainability and Corporate Social Responsibility policies
- How to overcome the dangers of 'Green Wash'

2.2. Know how to assess an organization's business operations; in terms of their carbon footprint. (90 minutes)

- Definition of carbon footprints: direct and indirect emissions
- Examples of an organization's footprints: direct and indirect emissions
- An understanding of carbon emissions across a product/service lifecycle including:

Concept & design

Material extraction

Transport

Manufacture

Usage

Disposal

- Carbon Footprint Calculators
- Carbon Offsetting and Carbon Neutrality
- Carbon trading

2.3. Understand the contribution that emissions from the use of IT are making to those carbon footprints in terms of energy consumption and behaviors. (90 minutes)

- PCs and mobile devices
- Office applications and equipment
- Communication and collaboration technologies
- Servers
- Data storage
- Data centres

2.4. Describe how to audit an organization's existing IT functions and processes. (60 minutes)

- Identification of energy and carbon inefficiencies
- Planning and prioritizing green IT initiatives
- Establishing a continuous improvement framework for Green ICT including use of the ITIL Continual Service Improvement Model
- Tools and methods available
- Roles and responsibilities

2.5. Understand the importance and risks, issues and opportunities around improving efficiency. (120 minutes)

- Printing and recycling
- Desktop kit (monitors, processors, external devices)
- Mobile and remote communications
- Server Rooms and Data Centres
- Including approaches for:
 - Assessing environmental and property impacts e.g. heating/cooling
 - Device consolidation
 - Different approaches to CPU, server and data storage optimization
 - Thin clients
 - Virtualization e.g. servers, disk tiering
 - Dematerialization – from assets to services
 - Cloud computing/Software as a Service (SaaS)
 - Power provisioning and management

2.6. Understand the concept of total systems lifecycle management that supports IT assets from manufacture to disposal and its carbon impact. (90 minutes):

- The supply chain for IT products and services
- The impact of suppliers and customers
- Procuring for Green IT, including:

Supplier selection criteria

Working with suppliers

Tools and methods available such as Suppliers and Contracts database

The benefits

- Providing efficient, low carbon support and maintenance, including:

Service desk

Change management

Service Asset and Configuration Management

Training

2.7. Understand how best to re-use, recycle and dispose of IT assets. (30 minutes)

- The impact of equipment refresh cycles
- Different approaches to product disposal
- Tools and approaches available
- The benefits of re-use, recycle and dispose

2.8. Developing a Green IT Action Plan (120 minutes)

- The scope
- Timelining and budgeting
- Roles and responsibilities
- Tools and methods
- Monitoring and measurement
- The benefits
- Employee engagement and management
- Stakeholder identification, engagement and management

3. Deployment of ICT for sustainability across your organization's activities (3hrs)*

3.1. Understand how to embed the use of ICT for reducing emissions from business activities, in an IT Strategy for Sustainability (60 minutes)

The role of IT in:

- Their business units
- Product/service delivery
- Achieving wider business goals
- Investments to achieve carbon reductions
- Achieving carbon neutrality

3.2. Discuss the roles and responsibilities associated with Green IT and IT for sustainable operations (30 minutes)

- The Green IT Champion
- Procurement Manager
- Sustainability Officer
- Corporate Social Responsibility (CSR) Manager

3.3. Explain how to encompass Green IT and IT for sustainable operations in end-to-end lifecycle costing, business cases and TCO (90 minutes)

- New accounting practices, to include 'social' accounting methods like Triple Bottom Line
- Definition and calculation of end-to-end lifecycle costs
- Definition and calculation of payback periods
- Definition and calculation of Total Cost of Ownership
- Tools and methods available