

DATA CENTRE INFRASTRUCTURE

CA2

DEADLINE / WEIGHT: As displayed on Moodle

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1 Aim

In this CA, you will identify a requirement for a *small* data-centre infrastructure (e.g. 1-3 cabinets), and will design a suitable solution.

2 Requirements

Your design is to be submitted as follows:

- in PDF
- max 4 pages
- sized portrait A4
- named **exactly** data_centre_design.pdf (case-sensitive)
- show your name and student number on the first page, and on each page have your name and student number in the header, and page number in the footer.

Incorrectly named documents or those lacking identification and pagination will receive an automatic zero grade for this assignment.

2.1 Technical aspects

The following technical aspects are required. Although the report must start with problem identification and end with evaluation, the other sections may follow in any order. Grading scheme will be shown on Moodle.

Problem identification (20%):

- identify the problem to be solved
- the business (or other) requirements
- the environment where the data centre is to be located
- summary of the equipment to be installed
- what level of reliability or availability are to be expected.
- do you have a target tier rating?
- what proportion of the infrastructure is virtualised?

Note that the data centre environment can be very small, perhaps in a domestic, small business, outdoor or other setting.

Space planning (20%):

- Present a space plan of how you plan to accommodate the required equipment.
- Consider rack spaces required for equipment you specify elsewhere

IT infrastructure (20%) • What IT equipment is installed in addition to servers (e.g. networking gear, storage appliances etc).

- What connectivity does this data centre have elsewhere? Does this data centre act as a connection point for the rest of the building it is in?
- Remote management solutions in-band and out-of-band. How is any virtualisation solution managed?

Services infrastructure (20%) • Power, cooling, fire detection/suppression, access control.

- What redundancies (if any) are needed, and how are they implemented?

- Sizing of power supply equipment (e.g. UPS).
- Cooling solution identified that matches requirements and environment that data centre is in.

Evaluation (20%) • Discuss what tier rating does your solution actually achieves?