

# Business Data Communication & Networks

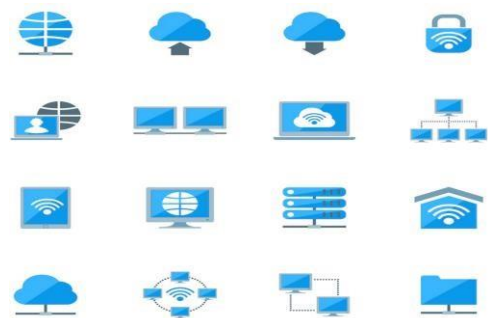
## Modern Network for Two New University Buildings

**Groups:** This coursework is intended for groups of 4-6 members

**Due in:** Tuesday 15th April 11:59

**Submission:** On Aula, using Turnitin

**Groups:** Each member must provide contribution



There are two new buildings in the *University of the West of Scotland*, **Building 1** and **Building 2**. The two new buildings are on the same University campus, and they are at the final stages of being built. Buildings 1 and 2 are currently not networked to each other, and they are not connected to the rest of the University network either. Also, there is no network currently installed in either of the two buildings.

The two buildings, when completed, will be used to provide offices to administrative staff and academics. The two new buildings will be used by the *School of Computing, Engineering and Physical Sciences* to deliver lectures, tutorials, seminars and lab activities in **Computing** to students using the various classrooms and labs.

**Building 1** has three floors. It has the following breakdown of key information for staff, students and facilities.

Key Information	Floor / Level	Current Numbers
Administrative Staff	Ground floor	20
Academics	1 <sup>st</sup> floor	10
Academics	2 <sup>nd</sup> floor	10
Students	Maximum capacity of building	500
Lecture Classrooms	1 <sup>st</sup> floor	6
Lecture Classrooms	2 <sup>nd</sup> floor	6

Tutorial Classrooms	1 <sup>st</sup> floor	6
Tutorial Classrooms	2 <sup>nd</sup> floor	6
Computer Labs	1 <sup>st</sup> floor	4
Computer Labs	2 <sup>nd</sup> floor	4
Social / Common Room	Ground floor	50

**Building 2** also has three floors. The breakdown of key information for Building 2 is the same as the Breakdown for Building 1 presented above.

## Your Tasks

You are hired by the University. You are required to produce a complete report explaining and justifying how you propose to network the:

- Floors of each new building to each other
- The two new buildings to each other
- The two new buildings to the rest of the University network

Your report should also explain how your solution addresses the needs of staff and students in the two new buildings. The report should be complete and fully justified. It should include:

- Detailed discussion and justification of how your proposed solution meets the needs of the staff, students, and the University.
- Detailed discussion and justification of hardware that will be used as part of your proposed solution.
- Detailed discussion and justification of software that will be used as part of your proposed solution.
- Detailed discussion and justification of network circuits (e.g. cabling, wireless) that will be used as part of your proposed solution. Detailed and justified network diagrams of the proposed network design should be included in your report (e.g. draw.io, Packet Tracer).
- Detailed discussion and justification of cloud-based services that will be used as part of your proposed solution.
- Detailed discussion and justification of comprehensive costings linked with your proposed solution

Your network-based solution should use **modern networking** methods and technologies. It should also cover the current and near future University needs. Therefore, **future-proofing** your proposed solution for the next five years is expected. Also, you will need to state clearly and prominently any **assumptions** that you make in your report.

## Marking Criteria

Criteria	Maximum Marks
Discussion and justification of proposed solution addressing user needs	10
Discussion and justification of proposed hardware	20
Discussion and justification of proposed software	15
Discussion and justification of proposed network circuits	15
Discussion and justification of proposed cloud-based services	10
Discussion and justification of proposed detailed costings	10
Conclusions & future recommendations	10
Presentation & Professionalism	10

## Report Professionalism

Your report will need to demonstrate high academic and professional standards. Specifically, your report should:

- Include an executive summary, summarising the key aspects of the report.
- Include a detailed table of contents and numbered sections and sub-sections.
- Be coherent and consistent in presentation and style.
- Not exceed 6,000 words excluding the reference list and appendices
- Make use of good quality graphics, diagrams, layout, and design principles
- Provide at least 10 relevant and properly cited references from the academic and professional literature and Internet sites.

- Make use of the UWS referencing system (accessible via: <https://uws-uk.libguides.com/referencing> )

## Submission

You are required to submit your report, by **Due date Tuesday 15th April 11:59** of the current academic trimester. Unauthorised late submission/s will be penalised in accordance with university regulations.

- The report is to be submitted in electronic form, by uploading it into Aula, via Turnitin.
- Only one group member must submit it on Aula, same member has to test plagiarism on Aula.