

**Department of Computing and Mathematics****ASSIGNMENT COVER SHEET**

<b>Unit title:</b>	Networks
<b>Assignment set by:</b>	Olamide Jogunola
<b>Assignment ID:</b>	1CWK100
<b>Assignment title:</b>	6G5Z0020_2223_9
<b>Assessment weighting:</b>	100%
<b>Type: (Group/Individual)</b>	Individual
<b>Hand-in deadline:</b>	Refer to Moodle
<b>Hand-in format and mechanism:</b>	Moodle

**Learning outcomes being assessed:**

**LO1:** Describe multiple different network technologies, protocols and configurations

**LO2:** Explain how devices communicate over a network and implement minimal best practices to secure a network

**LO3:** Design and configure a local area network

**Note:** it is your responsibility to make sure that your work is complete and available for marking by the deadline. Make sure that you have followed the submission instructions carefully, and your work is submitted in the correct format, using the correct hand-in mechanism (e.g. Moodle upload). If submitting via Moodle, you are advised to check your work after upload, to make sure it has uploaded properly. Do not alter your work after the deadline. You should make at least one full backup copy of your work.

**Penalties for late hand-in:** see Regulations for Undergraduate Programmes of Study (<https://www.mmu.ac.uk/academic/casqe/regulations/assessment/docs/ug-regs.pdf>). The timeliness of submissions is strictly monitored and enforced.

All coursework has a late submission window of 7 days (i.e. 5 working days), but any work submitted within the late window will be capped at 40%, unless you have an agreed extension. Work submitted after the 7-day late window will be capped at zero, unless you have an agreed extension.

Please note that individual tutors are unable to grant extensions to coursework.

**Extensions:** For most coursework assessments, you can request a 7-day extension through Moodle. This will not apply to in-class tests, presentations, interviews, etc, that take place at a specific time. If you need a longer extension you can apply for an 'Evidenced Extension'. For an Evidenced Extension you **MUST** submit 3rd party evidence of the condition or situation which has negatively impacted on your ability to submit or perform in an assessment.

**Plagiarism:** Plagiarism is the unacknowledged representation of another person's work, or use of their ideas, as one's own. Manchester Metropolitan University takes care to detect plagiarism, employs plagiarism detection software, and imposes severe penalties, as outlined in the Student Handbook ([http://www.mmu.ac.uk/academic/casqe/regulations/docs/policies\\_regulations.pdf](http://www.mmu.ac.uk/academic/casqe/regulations/docs/policies_regulations.pdf) and Regulations for Undergraduate Programmes (<https://www.mmu.ac.uk/academic/casqe/regulations/assessment/docs/ug-regs.pdf>). Bad referencing or submitting the wrong assignment may still be treated as plagiarism. If in doubt, seek advice from your tutor.

**As part of a plagiarism check, you may be asked to attend a meeting with the Unit Leader, or another member of the unit delivery team, where you will be asked to explain your work (e.g. explain the code in a programming assignment). If you are called to one of these meetings, it is very important that you attend.**

<b>Assessment Criteria:</b>	Refer to the assessment criteria table at the end of the document.
<b>Formative Feedback:</b>	Formative feedback will be provided verbally during the assessment support labs and also during the revision week.  Additional support will be provided by the unit staff. You can request an appointment by sending an email to the unit staff which can be found on the Moodle page.
<b>Summative Feedback Format:</b>	Individual summative feedback will be given through Moodle approximately 4 weeks after Moodle submission deadline

#### **Assignment Tasks:**

The assignment requires you to plan, design, and implement a medium-level network for an advertising client with about 50 employees. The newly acquired building for the client's operation spans 2 floors. Each floor consists of 2 offices with 10 open-plan desks per office (40 in total across the two floors). Each of the floor needs both wired and wireless connectivity. Your task is to design and implement a local area network for the client and write a 2500-word report detailing your network plan, configurations, and evaluation. Your report must contain the following:

- A CIDR IP addressing scheme to specify IP addresses for the deployed networking devices to ensure scalability of the network while reducing wastage
- Screenshot, pictures, or listings of the configuration details of each networking device in the network.
- Configure secure shell (SSH) on one of the routers to manage it remotely.
- Demonstrate at least 2 connectivity results which must include at least two switches/routers and two PCs.
- You must also demonstrate and verify RIP and DHCP configurations where appropriate.

You must use the following template to structure your report:

- Title
- Introduction

- Objectives and overview of the coursework
- Plan, design and deployment of a network design using Packet Tracer
- Configuration details and simulation results
- Evaluate the designed network through a connectivity/debugging technique (i.e. Ping, RIP, etc)
- Conclusion
- References and Appendices, etc.

**What to hand in?**

You will submit an individual report of 2500 +/- 10% words through Moodle submission inbox, as a single PDF file. In addition, please use the following naming structure for your report before uploading it to Moodle ("lastname-firstname-studentID.pdf")

## Marking criteria

	Poor 0 – 39%	Acceptable 40 – 49%	Good 50 – 59%	Very Good 60 – 69%	Excellent 70 – 84%	Outstanding 85%+
<b>Task 1 – Network design and configurations (35%)</b>	Little or no evidence of an attempt at designing a network.	A limited attempt at designing a network.  The designed network did not address the task objectives.	A good attempt at network design that addresses some of the tasks objectives.  Some appraisal of the configuration details including DHCP and RIP	A very good attempt at the network design with configuration details that address the task objectives	A complete network design that addresses the objectives of the task.  An excellent description of the configuration details of the networking devices, including cables used between devices.	A complete network design that addresses the objectives of the task.  An excellent description of the configuration details of the networking devices.  An excellent justification for the choice of the deployed networking devices.
<b>Task 2 – Network evaluation and connectivity tests (30%)</b>	Little to no evidence of network connectivity test.	A limited attempt at showing connectivity tests among the networking devices.	A good attempt at showing the connectivity tests among the networking devices  The connectivity test also includes some appraisal of RIP and DHCP verification	A very good attempt at showing the connectivity tests among the networking devices  The connectivity test also includes detailed verification of RIP and DHCP configurations	A complete network evaluation showing the connectivity tests among the networking devices  The connectivity test also includes well-documented RIP and DHCP verification with thoughts given to providing additional information on the protocols.	A well-documented network evaluation and connectivity test. Details provided for Pings, RIP, and DHCP connectivity verification.  An excellent description and additional information on each verification technique.
<b>Task 3 – Reporting (35%)</b>	Key sections missing from the report.	Key sections are present.  An attempt to produce a summary report but does not include all relevant sections.  An attempt to include a methodology walkthrough and outline of steps taken. However not	All sections are present.  Overall, good summary.  A good attempt to include a methodology walkthrough and outline of steps taken. However, relevant sections are not included.	All sections are present.  Overall, very good summary.  Methodology walkthrough and detailed outline of steps taken are included and clearly written. However, some relevant sections are incomplete.	All sections are present.  Excellent Summary.  A methodology walkthrough and a detailed outline of steps taken are included.  Each finding is reported with relevant screenshots.	A well-structured report.  An outstanding detailed report that included sections relevant to the task.  A methodology walkthrough and detailed outline of steps are included, accurate and clearly written for all tasks.

		<p>clearly written or missing some parts.</p> <p>An attempt to include screenshots for configurations, verifications, etc. but some parts missing.</p> <p>The report writing and structure is acceptable; however, improvements are needed.</p>	<p>Inclusion of screenshots and a walkthrough for all relevant tasks but some parts missing.</p> <p>The report writing and structure are good; however, improvements are needed.</p>	<p>Inclusion of screenshots and walkthroughs for all relevant tasks.</p> <p>The report writing and structure are very good; however, improvements are needed</p>	<p>The report writing and structure are excellent. However, some minor grammatical errors and typos are present</p>	<p>Each finding included screenshots and a walkthrough for all relevant tasks.</p> <p>The report writing and structure are of outstanding quality with no writing or grammar issues.</p>
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