# Assessment Rubric

**Submission requirements (all non non-submissions)**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Submission requirements** |  |
| R1 | Viva attended |  |
| R2 | Checklist provided to tutor at viva |  |
| R3 | Submission is a single zip file | Yes |

**Basic Requirements Required for Pass (40% or greater)**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Submission requirements** |  |
| R4 | Submission contains ‘Client’ and ‘Server’ folders inside the zip file | Yes |
| R5 | Code runs on any computer in MS214 or MS215.  **Note:** you should not hardcode a path or IP address in the code that you write. Any path should be relative to the location of the executable | Yes – no hardcodes paths |
| R6 | Solution interprets/builds without any errors or warnings | Yes |
| R7 | Implementation Log provided in zip file | Yes |
| R8 | Feature checklist provided in zip file | Yes |
|  | **Networking Requirements** |  |
| N1 | Synchronous bidirectional communication between client and server. | Yes |
| N2 | Connection and disconnection are handled without errors on the server side. | Yes |
| N3 | Error handling and message content verification are handled on the server side. | Yes |
|  | **Security Requirements** |  |
| S1 | Network traffic is encrypted using a standard algorithm using [a pre-shared, entered, or non-negotiated key]. | Yes |
|  | Application Requirements |  |
| A1 | Implements at least 2 states that alter the behaviour of the system based on user input. | Yes |

**Additional Features Required for Grade of 50% or Greater**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Networking Requirements** |  |
| N4 | Multiple clients supported by a single server. | Yes |
| N5 | Error handling and message content verification are handled on both the client and server side (replaces N3) | Yes |
|  | **Security Requirements** |  |

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| S2 | Key is negotiated using an appropriate mechanism such Diffie-Hellman (modifies S1 component in []) | Yes |
|  | Application Requirements |  |
| A2 | Implements at least 1 complex state that allows data to be stored between sessions. | Yes |

**Additional Features Required for Grade of 60% or Greater**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Networking Requirements** |  |
| N6 | Asynchronous bidirectional communication between client(s) and server (replaces N1). |  |
|  | **Security Requirements** |  |
| S3 | Packets implement mechanisms to prevent at least 1 kind of attack e.g. replay attacks. |  |
|  | Application Requirements |  |
| A3 | Implements at least 1 complex state that alters typical network communication pattern (e.g. client can send an arbitrary number of messages in a row) . |  |

**Additional Features Required for Grade of 70% or Greater**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Networking Requirements** |  |
| N7 | Shared state information between multiple clients and server. |  |
| N8 | Network code is provided as a layered solution separated from the application logic. |  |
|  | **Security Requirements** |  |
| S4 | AAA implemented (authentication, authorisation, and auditing) e.g. user privilege levels. |  |
|  | Application Requirements |  |
| A4 | Implements an appropriate way to view or access AAA information. |  |

**Additional Features Required for Grade of 80% or Greater**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Networking Requirements** |  |

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| N9 | Single additional feature e.g. heartbeat, peerto-peer implementation, or other functionality agreed with tutor. |  |
|  | **Security Requirements** |  |
| S5 | Single additional feature e.g. data encrypted on storage, user password resets, account lockouts. |  |

**Additional Features Required for Grade of 90% or Greater**

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|  | **Requirement** | **Level of Implementation/Details** |
|  | **Networking Requirements** |  |
| N10 | Multiple additional feature e.g. heartbeat, peer-to-peer implementation, or other functionality agreed with your tutor (replaces N8). |  |
|  | **Security Requirements** |  |
| S6 | Multiple additional feature e.g. data encrypted on storage, user password resets, account lockouts (replaces S5). |  |

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| **List any other features implemented** | **Details** |
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