

# CH-110 Advanced General Chemistry – Part I

## Syllabus Fall 2025

| Week                         | Date                      | Topic  |
|------------------------------|---------------------------|--|
| 1                            | September 9, 16:15-18:00  | Introduction/fundamentals:<br>Topic: Fundamentals B            |
| 1                            | September 12, 11:15-12:00 | Topic 1A: Investigating atoms                                  |
| 2                            | September 16, 16:15-18:00 | Topic 1B: Quantum theory                                       |
| 2                            | September 19, 11:15-12:00 | Topic 1C: Wavefunctions and energy levels                      |
| 3                            | September 23, 16:15-18:00 | Topic 1C: Wavefunctions and energy levels                      |
| 3                            | September 26, 11:15-12:00 | Topic 1D: The hydrogen atom                                    |
| 4                            | September 30, 16:15-18:00 | Topic 1D: The hydrogen atom                                    |
| 4                            | October 3, 11:15-12:00    | Topic 1E: Many-electron atoms                                  |
| 5                            | October 7, 16:15-18:00    | Topic 1F: Periodicity  |
| 5                            | October 10, 11:15-12:00   | Topic 2A: Ionic bonding  |
| 6                            | October 14, 16:15-18:00   | Topic 2B: Covalent bonding                                     |
| 6                            | October 17, 11:15-12:00   | Topic 2C: Beyond the octet rule                                |
| Semester break               |                           |  |
| 7                            | October 28, 16:15-18:00   | Topic 2D: The properties of bonds<br>Topic 2E: The VSEPR model |
| 7                            | October 31, 11:15-12:00   | Topic 2E: The VSEPR model                                      |
| 8                            | November 4, 16:15-18:00   | Topic 2F: Valence-bond theory                                  |
| 8                            | November 7, 11:15-12:00   | Topic 2F: Valence-bond theory                                  |
| 9                            | November 11, 16:15-18:00  | Topic 2G: Molecular orbital theory                             |
| 9                            | November 14, 11:15-12:00  | Practice exam  |
| End of atomic structure part |                           |  |

Revised 3.11.25