

BSC ENVIRONMENTAL CHEMISTRY COURSE OUTLINE YEAR ONE

| Course unit | Course title | Hours | Semester |
|-------------|---|-------|----------|
| SCH 101 | General and Inorganic Chemistry | 45 | 1 |
| SCH 102 | Introduction to Organic Chemistry, Chemistry of Alkanes and cycloalkanes | 45 | 2 |
| SCH 103 | General and Physical Chemistry | 45 | 1 |
| SCI 104 | Foundations of Computer Science | 45 | 1 |
| SCA 101 | Safety Methods in the Laboratory | 45 | 1 |
| SMA 101 | Basic Mathematics | 45 | 1 |
| SMA 103 | Calculus 1 | 45 | 1 |
| SMA 104 | Calculus 2 | 45 | 2 |
| SCI 101 | Elements of Physics I | 45 | 2 |
| CCS 001 | Communication Skills | 45 | 1 |
| CCS 009 | Elements of Economics | 45 | 1 |
| CCS 010 | HIV and AIDS | 45 | 2 |



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| Course unit | Course title | Hours | Semester |
|----------------|--|-------|----------|
| SCH 201: | Chemistry of the Main Block Elements | 45 | 1 |
| SCH 202 | The Chemistry of Alkyl Halides, Alcohols, Ethers Alkenes, Alkynes and Aromatic Compounds | 45 | 1 |
| SCH 203 | Thermodynamics I and Thermochemistry | 45 | 1 |
| SCH 204 | Introduction to Reaction Kinetics and Electrochemistry | 45 | 2 |
| SCH 205 | Group Theory and its Chemical Applications | 45 | 2 |
| SCH 206 | Organic Acids, Amines, Esters and Phenols | 45 | 2 |
| SCE 201 | Introduction to Environmental Chemistry | 45 | 1 |
| SCI 202 | Introduction to Unit Operations | 45 | 1 |
| SCI 203 | Elements of Physics (II) | 45 | 2 |
| <u>SCA 201</u> | <u>Quantitative Analysis</u> | 45 | 2 |
| SMA 208 | Ordinary Differential Equations | 45 | 2 |
| SMA 209 | Elements of Algebra | 45 | 1 |



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| Course unit | Course title | Hours | Semester |
|-------------|--|-------|----------|
| SCH 301 | Theory of Spectroscopy | 45 | 1 |
| SCH 302 | Stereochemistry and Synthesis of Organic Compounds | 45 | 1 |
| SCH 303: | Thermodynamics II and Phase Equilibria | 45 | 1 |
| SCH 304: | Coordination Chemistry | 45 | 2 |
| SCH 305: | Amino acids, Peptides, Proteins, Carbohydrates and Nucleic acids | 45 | 2 |
| SCE 301 | Water Resource Pollution and Management | 45 | 1 |
| SCE 302 | Soil Chemistry, Pollution and Remediation | 45 | 2 |
| SCE 303 | Air Chemistry, Pollution and Management | 45 | 2 |
| ELECTIVES | | | |
| SCE 304 | Chemical Toxicology | 45 | 1 |
| SCE 305 | Natural Resource Extraction and Restoration Processes | 45 | 1 |
| SCA 305 | Statistics for Chemists | 45 | 2 |



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BSC ENVIRONMENTAL CHEMISTRY COURSE OUTLINE YEAR FOUR

| Course unit | Course title | Hours | Semester |
|------------------|--|-------|----------|
| SCH 401 | Chemistry of Transition Elements | 45 | 1 |
| SCH 402 | Heterocyclic Chemistry | 45 | 1 |
| SCH 403 | Surface and Colloid Chemistry | 45 | 2 |
| SCH 404 | Organometallic Chemistry | 45 | 2 |
| SCH 405 | Further Chemical kinetics and Electrochemistry | 45 | 1 |
| SCE 401 | Environmental Biotechnology | 45 | 2 |
| SCE 402 | Environmental Impact Assessment and Audit | 45 | 1 |
| SCE 403 | Business Ventures, Organization and Marketing Strategies | 45 | 2 |
| ELECTIVES | | | |
| SCE 404 | Principles, Theory and Practice of Cleaner Production | 45 | 2 |
| SCE 405 | Climate Variability and Change | 45 | 1 |
| SCE 406 | Hazardous Waste Management | 45 | 2 |
| SCE 407 | Energy and the Environment | 45 | 1 |
| SCE 408 | Research Project in Environmental Chemistry | 45 | 1,2 |
| SCA 402 | <u>Quantitation and Analytical Chemistry of Pollutants</u> | 45 | 2 |



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