AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

Chemistry and Biochemistry

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Chemistry is called the central science because of its pervasive influence on all aspects of life and because it links together all the other natural sciences. Biochemistry is the application of chemistry to the study of biological processes at the cellular and molecular level. Chemistry and biochemistry are essential to the understanding of the physical world and its living systems. Chemists apply the scientific method to study the composition and properties of matter, while biochemists analyze how chemical processes relate to and affect living organisms. They play a fundamental role in the development of such fields as industry, medicine, biochemistry and genetic engineering. Chemists and biochemists are key personnel in pharmaceutical and food industries, clinical and basic research, petroluem refineries and enviornmental firms, petroleum refineries and environmental firms, working together with other scientists and engineers.

Possible Career Options

- Forensic Scientist
- Analytical Chemist
- Environmental Chemist
- Health and Safety Officer
- Biomedical Scientist
- Forensic Chemist
- Food Analyst
- Pharmaceutical Drug Analyst
- Researcher
- Professor
- Biochemist

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Possible Employers

- Petrochemical Industries
- Consultants
- Chemical Industries
- Police Laboratories
- Colleges and Universities
- Governmental Organizations
- Biomedical Laboratories
- Genetic Engineering Firms
- Pharmaceutical Industries
- Plastic and Petroleum Companies
- Food Industries
- Consulting Firms

Skills Required

- Interest in chemistry, biochemistry, mathematics and physics
- Comprehensive knowledge of chemical and biochemical theories and practices
- Ability to plan and develop research models using computers
- Ability to communicate and work well with people
- Ability to organize, analyze, understand and interpret numerical data
- Ability to think analytically and scientifically
- Ability to solve problems
- Ability to use logic and scientific thinking to deal with different types of problems
- Ability to make sound judgments and decisions
- Ability to creatively solve quantitative problems
- Ability to communicate well orally and in writing
- Ability to use information obtained from the chemical literature and the web

Personal Attributes

- Achievement-oriented
- Capacity for detail and order
- Analytical and logical thinking
- Desire for precision
- Interest in laboratory work
- Integrity
- Creativity
- Interest in working with data, numbers and formulas
- Creativity
- Mathematical reasoning
- Inductive and deductive reasoning
- Resourcefulness
- Organized and confident
- Independent thinking

Ways to Get Experience

- Doing an internship
- Attending scientific lecturers, workshops or conventions
- Joining professional chemical societies
- Working part-time at a school or university chemistry/ biochemistry department