



Purpose:

To support the curriculum and research goals of faculty and students in the Chemistry Department. The Doctor of Philosophy degree (Ph.D.) in Chemistry focuses in Analytical Chemistry, Biochemistry, Organic and Medicinal Chemistry, Biophysical Chemistry and Bioinformatics. A Ph.D. in chemistry with a concentration in geochemistry is also available. Also offered is a Master of Science degree (M.Sc.) in Chemistry with specialization in analytical chemistry, biochemistry, organic chemistry, inorganic chemistry, physical chemistry, and bioinformatics. Departments sharing interest with Chemistry are Biology, Physics, Geology and various departments in the College of Health Sciences.

Sub-specialties to strongly consider at the research level for GSU faculty and graduate students include:

- Biochemistry
- Bioorganic chemistry
- Biophysical chemistry
- Bioinformatics
- Geochemistry
- Microbiology
- Molecular genetics
- Physiology and neurobiology

General Collection Guidelines:

- a. Languages: English is the primary language of the collection.
- b. Treatment of Subject: Research and graduate materials are of main focus. Consideration to maintaining a strong undergraduate collection is also encouraged. Biography and general interest material will be selectively purchased. Upper division textbooks will be acquired.
- c. Types of Materials: Selection will include monographs and periodicals, encyclopedias, dictionaries, compendia, treatises, proceedings/transactions of conference/congresses/symposia, and data collections. Audio-visual materials as well as CD-ROM products and interactive video will be acquired when needed.
- d. Date of Publication: Primarily current imprints will be selected. Some retrospective acquisition of classic or standards works not already in the collection.

Collecting Levels by Subject Subdivision:**Collecting Level****Analytical Chemistry:**

Basic concepts of analytical chemistry with emphasis to biologically-oriented problems:

-Electrochemistry	4
-NMR (Nuclear Magnetic Resonance)	4
-IR (Infra-Red)	4
-Fluorescence Spectroscopy	4
-X-ray Crystallography	4
-Mass Spectroscopy	4
-HPLC (High Performance Liquid Chromatography)	3c
-GC (Gas Chromatography)	3c
-Electrophoresis	3c
-TLC (Thin Layer Chromatography)	3c
-Raman Spectroscopy	3c
-Mössbauer Spectroscopy	2a
-UV/Visible Spectroscopy	2a
-Laser Spectroscopy	2a

Organic Chemistry:

From basic principles to Synthetic methods and Laboratory techniques:

-Heterocyclic Chemistry	4
-Mechanisms	4
-Drug Design	4
-Bioorganic Chemistry	4
-Laboratory Techniques	4
-Natural Products	3c
-Reagents	3c
-Combinational Chemistry	3c
-Polymer	2a

Biochemistry:

Biochemical phenomena: proteins, enzymes, vitamins, carbohydrates, lipids, nucleic acids, DNA, RNA, and metabolism.

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Physical Chemistry:

Principles of thermodynamics, molecular structure,

and kinetics. Advanced topics might include chemical kinetics, statistical mechanics, quantum mechanics, molecular spectra, phase equilibrium.

3c

Inorganic Chemistry:

Periodic relationships of the elements and their compounds, including those less commonly encountered. Bonding, reaction and mechanisms, complexes, and stereochemistry.

3c

Bioinformatics:

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