

Chemistry - B.S.

(Materials Option)

College of
Arts and Sciences

NOTE: At the time of publication, the Materials Option had been provisionally approved by the Senate; final approval is expected for fall 2016.

Any student earning a Bachelor of Science (BS) degree must complete a minimum of 60 hours in natural, physical, mathematical, and computer science. For a complete description of College requirements for a Bachelor of Science degree, including a specific listing of courses applicable to the 60-hour requirement, see the *Arts and Sciences* section of the 2016-2017 *UK Bulletin*.

UK Core Requirements

See the UK Core section of the 2016-2017 *Undergraduate Bulletin* for the complete UK Core requirements. The courses listed below are (a) recommended by the college, or (b) required courses that also fulfill UK Core areas. Students should work closely with their advisor to complete the UK Core requirements.

I. Intellectual Inquiry in Arts and Creativity

Choose one course from approved list 3

II. Intellectual Inquiry in the Humanities

Choose one course from approved list 3

III. Intellectual Inquiry in the Social Sciences

Choose one course from approved list 3

IV. Intellectual Inquiry in the Natural, Physical, and Mathematical Sciences

CHE 105 General College Chemistry I 4

CHE 111 Laboratory to Accompany General Chemistry I 1

V. Composition and Communication I

CIS/WRD 110 Composition and Communication I 3

VI. Composition and Communication II

CIS/WRD 111 Composition and Communication II 3

VII. Quantitative Foundations

MA 113 Calculus I 4

VIII. Statistical Inferential Reasoning

Choose one course from approved list 3

IX. Community, Culture and Citizenship in the USA

Choose one course from approved list 3

X. Global Dynamics

Choose one course from approved list 3

UK Core hours: 33

Graduation Composition and Communication Requirement (GCCR)

CHE 372 Communication in Chemistry I 1

CHE 472 Communication in Chemistry II 1

Graduation Composition and Communication Requirement hours (GCCR)

..... 2

College Requirements

I. Foreign Language (*placement exam recommended*)[^] 0-14

II. Disciplinary Requirements

a. Natural Science (*completed by Major Requirements*)

b. Social Science 3

c. Humanities 3

III. Laboratory or Field Work (*completed by Premajor Requirement*)

IV. Electives 6

College Requirement hours: 12-26

Premajor Requirements

*MA 113 Calculus I 4

MA 114 Calculus II 4

*CHE 105 General College Chemistry I 4

CHE 107 General College Chemistry II 3

*CHE 111 Laboratory to Accompany General Chemistry I 1

CHE 113 Laboratory to Accompany General Chemistry II 2

Premajor hours: 18

Major Requirements

Major Core Requirements

MSE 201 Materials Science 3

CHE 226 Analytical Chemistry 3

CHE 230 Organic Chemistry I 3

CHE 231 Organic Chemistry Laboratory I 1

CHE 232 Organic Chemistry II 3

CHE 372 Communication in Chemistry I 1

CHE 410G Inorganic Chemistry 2

CHE 412 Inorganic Chemistry Laboratory 2

CHE 441 Physical Chemistry Laboratory 2

CHE 472 Communication in Chemistry II 1

CHE 516 Inorganic Chemistry Laboratory 3

CHE 532 Spectrometric Identification of Organic Molecules 2

CHE 533 Qualitative Organic Analysis Laboratory 2

CHE 536 Organic Materials: Electronic and Photonic Properties 3

CHE 547 Principles of Physical Chemistry I 3

CHE 566 Organic Materials: Characterization and Devices 3

CHE 567 Organic Materials: Fabrication Laboratory 2

CHE 576 Polymer Chemistry 3

Major Core hours: 42

Other Course Work Required for the Major

From the Major Department:

Chemistry Major Field Options 6

Choose 6 hours from the following: up to 6 hours of CHE 395, any CHE 500-level course except for those required (CHE 422/532/533/ [550 or 552]); BCH 401G.

From the Mathematics Department

MA 213 Calculus III 4

From the Physics Department

*PHY 231/232 General University Physics 8

*PHY 241/242 General University Physics Laboratory 2

Other Major hours: 20

—CONTINUED—

University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at www.sacscoc.org for questions about the accreditation of University of Kentucky.

Chemistry (B.S.) – Materials Option • 2

Electives

Choose electives to lead to the minimum total of 128 hours required for graduation.

Total Minimum Hours

Required for Degree 128

[^]Any language may be used to satisfy the College Foreign Language requirements – German is recommended.

*Course used towards completion of a UK Core Requirement.

Curriculum for B.S. in Chemistry Materials Chemistry Option

Freshman Year

First Semester	Hours
CHE 105 General College Chemistry I	4
CHE 111 Laboratory to Accompany General Chemistry I	1
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4
STA 210 Making Sense of Uncertainty: An Introduction to Statistical Reasoning	3
Second Semester	
CHE 107 General College Chemistry II	3
CHE 113 Laboratory to Accompany General Chemistry II	2
MA 114 Calculus II	4
CIS/WRD 111 Composition and Communication II	3
UK Core – Arts and Creativity	3

Sophomore Year

First Semester	Hours
CHE 230 Organic Chemistry I	3
CHE 231 Organic Chemistry Laboratory I	1
MA 213 Calculus III	4
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1
UK Core – Social Sciences	3
Second Semester	
CHE 226 Analytical Chemistry	3
CHE 232 Organic Chemistry II	3
PHY 232 General University Physics	4
PHY 242 General University Physics Laboratory	1
Foreign Language I [^]	4
UK Core – Humanities	3

Junior Year

First Semester	Hours
MSE 201 Materials Science	3
CHE 547 Principles of Physical Chemistry I	3
CHE 532 Spectrometric Identification of Organic Molecules	2
CHE 576 Polymer Chemistry	3
Foreign Language II [^]	4
A&S Humanities	3
Second Semester	
CHE 410G Inorganic Chemistry	2
CHE 533 Qualitative Organic Analysis Laboratory	2
CHE 441 Physical Chemistry Laboratory	2
CHE 516 Inorganic Chemistry Laboratory	3
Foreign Language III [^]	4
A&S Free Elective	3

Senior Year

First Semester	Hours
CHE 412 Inorganic Chemistry Laboratory	2
CHE 372 Communication in Chemistry I	1
CHE 536 Organic Materials: Electronic and Photonic Properties	3
Major Field Option	3
A&S Social Sciences	3
UK Core – Citizenship - USA	3
Second Semester	
CHE 566 Organic Materials: Characterization and Devices	3
CHE 567 Organic Materials: Fabrication Laboratory	2
CHE 472 Communication in Chemistry II	1
Major Field Option	3
A&S Free Elective	3
UK Core – Global Dynamics	3

[^]Any foreign language sequence satisfying the College of Arts and Sciences requirement in foreign languages may be taken. German is recommended.

Certification Requirements

The B.S. degree is certified by the American Chemical Society.