

KY Valid Course List

HOW TO USE THIS DOCUMENT

This document contains a listing of course descriptions and parameters along with certifications that fit the parameters for a given course. The grade range and population information listed for each course are not absolute. Please choose the course that most closely represents the students in a given course.

EXAMPLE

John Q Middle School had 5th, 6th, and 7th grade students taking a Creative Art course. This course would be linked to course number **500711: Creative Art – Comprehensive**, which shows with a recommended grade range of 6th – 12th.

The courses listed in this document are not meant to replace the course titles and course numbers already in use at the school level. Schools will link their courses on the Infinite Campus “Course Master” tab OR in the “Course” tab to courses listed in this document.

Schools may have created courses that are very unique in order to meet students’ needs. If a course does not meet the definition or content of one contained in this document, please use course number **909999: School Defined Course**, and code the correct content through the LEAD report.

CERTIFICATIONS

It is important to note that the certificates listed are the ones that fit **ALL** of the parameters for a specific course – there may be other certificates that can teach it with slightly more restrictive parameters.

It is very important to note that not all of the certificates listed under a specific course will meet the Highly Qualified Teacher standards as defined by The No Child Left Behind Act of 2001. Please refer to the Highly Qualified guidance documents located on the Education Professional Standards Board (EPSB) website at <http://www.epsb.ky.gov/nclb.asp>.

In addition to Highly Qualified considerations, please take note of the following information from **The Kentucky Core Academic Standards** with regard to middle school courses that are offered for high school credit.

High School Credit Earned in Middle School

It is expected that most students will earn these credits during their high school years. However, local school districts may offer these courses to middle level students if the following criteria are met:

- the content and the rigor of the course is the same as established in the *Kentucky Core Academic Standards*
- the students demonstrate mastery of the middle level content as specified in the *Kentucky Core Academic Standards*
- the district has criteria in place to make reasonable determination that the middle level student is capable of success in the high school course
- **the middle level course is taught by teachers with either secondary or middle level certification with appropriate content specialization**

Although middle level courses list the Provisional and Standard Elementary Certificates, Grades 1-8 as allowable under the parameters of these courses, they will not meet the above requirements for courses that are offered for high school credit.

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Please contact Robin Chandler, policy advisor for the Office of Next Generation Learners in KDE, at 502-564-2106 with any questions on content and curricula.

Please contact EPSB’s Division of Certification at 502-564-4606 with any questions on credentials or permissions.

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Science

(300000)

Science - Elementary/Middle (300100)

300150 - Physical Science 5

Grade Level: 5 - 5

Credits:

Description: Students will develop conceptual understandings of physical science through using scientific inquiry. In this course, students will experience physical science concepts of properties and changes of properties in matter, motions and forces, and transfer of energy, as described in Kentucky's Program of Studies for Intermediate Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Physical Science

Population: General

AJEL	Adjunct Instructor For Elementary, Grades P-5
AJG5	Adjunct Instructor for Middle Grades Science
AM50	Approval For Teaching Science In The Middle Grades 5-6
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J52	Junior High Major: Chemistry
K50L	Kentucky Middle School Science Limited, Grades 5-9
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5
KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
KELL	Kentucky Elementary Limited, Grades P-5
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TEEL	Temporary Certificate For Elementary, Grades P-5
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9

WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
XM50	Emergency Certificate For Middle School Science

300155 - Integrated Science 5

Grade Level: 5 - 5

Credits:

Description: In this course, students experience transfer of energy, structure of the Earth system, and structure and function in living systems, as outlined in Kentucky's Program of Studies for Intermediate Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Integrated Science (Non-High School)

Population: General

AJEL	Adjunct Instructor For Elementary, Grades P-5
AJG5	Adjunct Instructor for Middle Grades Science
AM50	Approval For Teaching Science In The Middle Grades 5-6
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
J54	Junior High Major: Biology-Health
K50L	Kentucky Middle School Science Limited, Grades 5-9
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5
KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
KELL	Kentucky Elementary Limited, Grades P-5
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TEEL	Temporary Certificate For Elementary, Grades P-5
TES	Endorsement For Elementary And Secondary Classroom Teaching

TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
XM50	Emergency Certificate For Middle School Science

300160 - Life Science 6

Grade Level: 6 - 6

Credits:

Description: Students will develop conceptual understandings of life science through using scientific inquiry. In this course, students will experience life science concepts of structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Life Science

Population: General

AJG5	Adjunct Instructor for Middle Grades Science
AM50	Approval For Teaching Science In The Middle Grades 5-6
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
K51	Junior High Semi-Major: Biology
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X51	Emergency Certificate For Teaching Biology
XM50	Emergency Certificate For Middle School Science

300166 - Integrated Science 6

Grade Level: 6 - 6

Credits:

Description: In this course, students experience motion and forces, Earth in the Solar System, regulation and behavior, and populations and ecosystems, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Integrated Science (Non-High School)

Population: General

AJG5	Adjunct Instructor for Middle Grades Science
AM50	Approval For Teaching Science In The Middle Grades 5-6
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
J54	Junior High Major: Biology-Health
K50L	Kentucky Middle School Science Limited, Grades 5-9
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science
XM50	Emergency Certificate For Middle School Science

300169 - Grade 6: Environmental Studies

Grade Level: 6 - 6

Credits:

Description: This sixth grade course model is an integrated approach to the study of our environment and

the factors that affect it. All content from the sixth grade science portion of the Program of Studies is presented in environmental contexts. Sample activities are provided to illustrate an instructional alliance that initiates student inquiry, builds understanding of scientific concepts, and promotes applications to real-life situations. The sample activities make connections to other content areas where the connection is natural and authentic. Thus, students are provided opportunities to reinforce and extend the content and process skills they have learned in other subject areas. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for the required content and may need to be adjusted for individual students and school situations.

Content: Earth Science

Population: General

AJG5	Adjunct Instructor for Middle Grades Science
AM50	Approval For Teaching Science In The Middle Grades 5-6
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J52	Junior High Major: Chemistry
K23	Junior High Semi-Major: Geography-Geology
K50L	Kentucky Middle School Science Limited, Grades 5-9
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X54	Emergency Certificate For Teaching Earth Science
XM50	Emergency Certificate For Middle School Science

300170 - Earth Space Science 7

Grade Level: 7 - 7

Credits:

Description: Students will develop conceptual understandings of earth/space science through using scientific inquiry. In this course, students will experience earth/space concepts of structure of the Earth system, Earth's history, and Earth in the Solar System, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Earth-Space Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJG5	Adjunct Instructor for Middle Grades Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J52	Junior High Major: Chemistry
K23	Junior High Semi-Major: Geography-Geology
K50L	Kentucky Middle School Science Limited, Grades 5-9
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X54	Emergency Certificate For Teaching Earth Science
XM50	Emergency Certificate For Middle School Science

300177 - Integrated Science 7

Grade Level: 7 - 7

Credits:

Description: In this course, students experience properties and changes of properties in matter, Earth's

history, reproduction and heredity, and diversity and adaptations of organisms, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hand-on experiences that requires students to apply critical thinking skills

Content: Integrated Science (Non-High School)

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJG5	Adjunct Instructor for Middle Grades Science
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
J54	Junior High Major: Biology-Health
K50L	Kentucky Middle School Science Limited, Grades 5-9
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9

X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science
XM50	Emergency Certificate For Middle School Science

300188 - Integrated Science 8

Grade Level: 8 - 8

Credits:

Description: In this course, students will be engaged in activities which will develop their understandings about Life, Earth and Space, and Physical Science concepts, as well as unifying ideas and concepts such as Energy Transformations and Interdependence as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach involving the use of concrete hands-on experiences that requires students to apply critical thinking skills is embedded in this course.

Content: Integrated Science (Non-High School)

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJG5	Adjunct Instructor for Middle Grades Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8

G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
J54	Junior High Major: Biology-Health
K50L	Kentucky Middle School Science Limited, Grades 5-9
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QBI	Teaching Field: Biology
QG50	Teaching Field: Middle Grades Science
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12

WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science
XM50	Emergency Certificate For Middle School Science

300195 - Forensics (6-8)

Grade Level: 6 - 8

Credits: 0

Description: This course is a problem-based inquiry course dealing with Forensic sciences.

Content: Forensic Science

Population: General

AJG5	Adjunct Instructor for Middle Grades Science
CG50	Professional Certificate For College Faculty, Middle School Science, Grades 5-9
CG5I	Provisional Internship Certificate For College Faculty, Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
G50	Middle School Teaching Field: Science
J50	Junior High Major: Science
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
J54	Junior High Major: Biology-Health
K50L	Kentucky Middle School Science Limited, Grades 5-9
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
QG50	Teaching Field: Middle Grades Science
SEA	Standard Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
T8G5	Temporary Provisional Certificate For Teaching Middle Grades Science, Grades 5-9 (Option 8)
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
XM50	Emergency Certificate For Middle School Science

Science - High School Life Science (302600)

302601 - Life Science/Biology 1

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of life science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience life science concepts such as the cellular organization; molecular basis of heredity; biological change; interdependence of organisms; matter, energy and organization in living systems; and behavior of organisms. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical-thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302602 - Biology II

Grade Level: 9 - 12

Credits: 1

Description: This is a second-level biology course for average or college track students.

Content: Biology

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology

B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302603 - Honors Biology

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Biology, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Biology

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302611 - Biochemistry

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include biochemical evolution, macromolecules, metabolism, glycolysis, photosynthesis, and respiration.

Content: Biochemistry**Population:** General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry

302612 - Botany

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the plant kingdom, including plant evolution, classification, plant ecology, and domestic plants.

Content: Botany

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302613 - Microbiology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of microbiological techniques, viruses, fungi, protozoans, bacteria, and pathogenic organisms.

Content: Microbiology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology

T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302614 - Ecology

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include biotic and abiotic factors, energy flow, mineral cycles, ecosystems, and biomes.

Content: Ecology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302615 - Zoology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the animal kingdom, including organ systems and dissection.

Content: Zoology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302616 - Forensics

Grade Level: 9 - 12

Credits: 1 credit

Description: This course is a problem-based inquiry course dealing with Forensic sciences.

Content: Forensic Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12

KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics

302618 - Medical Science

Grade Level: 9 - 12

Credits: 1

Description: This one-credit course uses health occupations as a vehicle to present the life science content outlined in the Program of Studies. The course is interdisciplinary in nature and integrates academic expectations and activities with the disciplines of life science, mathematics, health, social studies, language arts, arts and humanities, and vocational studies. During their study of medical science, students will gain an understanding of the normal structure and function of the human body through scientific inquiry. Life science conceptual understandings, applications, and connections make this science relevant to students. Anatomy, physiology, physics, and chemistry concepts are reinforced with real-life analogies and health-related examples are used to illustrate potentially difficult scientific concepts.

Content: Medical Science for the Life Science Component within the Science Requirement

Population: General

200	Allied Health Science
210	Health Science
211	Radiology Technology
A50	Area Specialization: Science
A78	Area Specialization: Health Occupations
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12

CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X200	Emergency Certificate for Allied Health Science
X210	Emergency Certificate For Health Services
X51	Emergency Certificate For Teaching Biology

302621 - Marine Biology

Grade Level: 9 - 12

Credits: 1

Description: This course addresses key concepts related to marine science, including ocean zones, seawater, habitats, and marine taxonomy.

Content: Marine Biology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302623 - IB Environmental Systems

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. This course may include, but is not limited to, the topics from the Environmental Systems Standard Level syllabus specified by the International Baccalaureate Organization. Topics may include: systems and models, the ecosystem, global cycles and physical systems, human population and carrying capacity, analyzing ecosystems, impacts of resource exploitation and conservation & biodiversity, pollution management.

Content: Ecology
Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302631 - Anatomy

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include plant structure, animal structure, tissues, organs, and systems.

Content: Anatomy and Physiology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302643 - Pre IB Biology

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302644 - IB Biology 2

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12

KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302645 - IB Biology 3

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302646 - AP Biology

Grade Level: 9 - 12

Credits: 1

Description: AP Biology is designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year. It aims to provide students with the conceptual framework, factual knowledge and analytical skills necessary to deal critically with the rapidly changing science of biology. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and to help students gain an appreciation of science as a process. The ongoing information explosion in biology makes these goals even more challenging. Primary emphasis in an Advanced Placement Biology course should be on developing an understanding of concepts rather than on memorizing terms and technical details. Essential to this conceptual understanding are the following: a grasp of science as a process rather than as an accumulation of facts; personal experience in scientific inquiry; recognition of

unifying themes that integrate the major topics of biology; and application of biological knowledge and critical thinking to environmental and social concerns. AP Biology is representative of the topics covered by the AP exam. Accordingly, goals have been set for percentage coverage of three general areas:

- Molecules and Cells, 25%
- Heredity and Evolution, 25%
- Organisms and Populations, 50%

Students should have successfully completed high school biology and high school chemistry.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Biology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302651 - Human Physiology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the human body, including nutrition concepts, digestive system, circulatory system, nervous system, and the reproductive system.

Content: Anatomy and Physiology

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12

QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302661 - Genetics

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include mutation, heredity, genetic principles, DNA and RNA, recombination, and viruses.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302680 - AgriBiology

Grade Level: 9 - 12

Credits: 1

Description: This one-credit course uses agricultural contexts to present the life science content outlined in the Program of Studies. As students study practical agricultural concepts, they apply scientific ways of thinking and working to real-life problems. During their study of agri-biology, students perform many practical tasks. They create models, extract DNA, analyze DNA fingerprints, construct tables and graphs to classify and analyze data, and test soils. Students also participate in cooperative and collaborative groups, use technology to solve problems, and participate in field trips to apply scientific concepts to agricultural and environmental problems. Students develop an understanding of many concepts such as cell structure and function, morphology and physiology of agriculturally significant animals, heredity principles and inheritance patterns, genetic engineering, animal behavior, biological change, interdependence of plants and animals, and the flow of matter and energy through ecosystems.

Content: Agribiology for Life Science Credit

Population: General

A50	Area Specialization: Science
A90	Area Specialization: Agriculture Vocational
A98	Area Specialization: Agriculture Non-Vocational
AJAG	Adjunct Instructor For Agriculture, Grades 5-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
B90	Teaching Major: Agriculture Vocational
B98	Teaching Major: Agriculture Non-Vocational
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C98	Teaching Minor: Agriculture Non-Vocational
CAG	Professional Certificate For College Faculty, Agriculture, Grades 5-12
CAGI	Provisional Internship Certificate For College Faculty, Agriculture, Grades 5-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COAG	Conditional One-Year Certificate For Teaching Agriculture, Grades 5-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
KAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
S901	Approval For Teaching Agricultural Resources
S906	Approval For Teaching Horticulture
S908	Approval For Teaching Agricultural Mechanics
S909	Approval For Teaching Forestry
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEAG	Temporary Certificate For Agriculture, Grades 5-12
TEBI	Temporary Certificate For Biology, Grades 8-12
TPAG	Temporary Provisional Certificate For Teaching Agriculture, Grades 5-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
WAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X90	Emergency Certificate For Teaching Agriculture

302685 - Agriscience

Grade Level: 9 - 12

Credits: 1

Description: This is an interdisciplinary course that deals with the Life Sciences, as described in Kentucky's Program of Studies, via agricultural contexts.

Content: Agriscience for Life Science Credit

Population: General

A90	Area Specialization: Agriculture Vocational
A98	Area Specialization: Agriculture Non-Vocational
AJAG	Adjunct Instructor For Agriculture, Grades 5-12
B90	Teaching Major: Agriculture Vocational
B98	Teaching Major: Agriculture Non-Vocational
C98	Teaching Minor: Agriculture Non-Vocational
CAG	Professional Certificate For College Faculty, Agriculture, Grades 5-12

CAGI	Provisional Internship Certificate For College Faculty, Agriculture, Grades 5-12
COAG	Conditional One-Year Certificate For Teaching Agriculture, Grades 5-12
KAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
KAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
S901	Approval For Teaching Agricultural Resources
S906	Approval For Teaching Horticulture
S908	Approval For Teaching Agricultural Mechanics
S909	Approval For Teaching Forestry
TEAG	Temporary Certificate For Agriculture, Grades 5-12
TPAG	Temporary Provisional Certificate For Teaching Agriculture, Grades 5-12
WAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
WAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
X90	Emergency Certificate For Teaching Agriculture

302698 - Intro Biology with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Biology and Earth/Space Science through the use of scientific inquiry. They experience biology and Earth/space science concepts, as outlined in Kentucky's Program of Studies, such as structure and function of cells; molecular basis of heredity; biological change; changes in the Earth system; interdependence of organisms; matter, energy and organization in living systems; and the behavior of organisms. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills. For this model the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302699 - Special Topics: Life Science

Grade Level: 9 - 12

Credits: 1

Description: The content of this Life Science course is determined by the teacher/student.

Content: Life Science

Population: General

A50	Area Specialization: Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

Science - High School Integrated (303000)

303010 - Astrobiology

Grade Level: 9 - 12

Credits: 1

Description: This is an inquiry-based course designed around the scientific study of life in the universe--its origin, evolution, distribution and future. This multidisciplinary course brings together the physical and biological sciences to address some of the most fundamental questions of the natural world: How do living systems emerge? How do habitable worlds form and how do they evolve? Does life exist on worlds other than Earth and what forms may they take?

Content: Integrated Science 4

Population: General

Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

AS4	Approval for Integrated Science IV
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303020 - Science Intervention

Grade Level: 9 - 12

Credits:

Description: This course description is reserved for targeted intervention or remediation courses in science.

Content: Integrated Science 1

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12

CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science

303090 - Multi-Subject/Multi-Grade Science

Grade Level: 6 - 12

Credits:

Description: This course is to be used for resource special education and alternative setting classrooms where students are receiving instruction in multiple content areas within the Science core. The individualized content for each specific course taught under this umbrella course must meet the standards listed in this document. A highly qualified teacher is required. This course number should not be utilized when instruction is being provided related to one specific course.

Content: Integrated Science 1

Population: Varies

Certification requirements are dependent upon the population being served.

303091 - Integrated Science I

Grade Level: 9 - 12

Credits: 1

Description: This inquiry based introductory course is designed around the themes of patterns of change and systems, order, and organization. Students examine the organization of the universe by beginning with the fundamental laws that give order, continue with the way these laws affect the Earth and the organization of life, and conclude with how life responds to these laws. Guiding Questions (based on content described in Kentucky's Program of Studies for High School Science): How can we use forces and the laws of motion to understand the motion of objects? How do observable structures on Earth's surface enable us to determine the internal energy sources of the Earth? How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere? How does Earth's internal and external sources of energy affect Earth's geochemical cycles? How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem? How do behavioral responses to stimuli ensure individual survival and reproductive success for species? When energy is transferred what forms can it assume?

Content: Integrated Science 1

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12

CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science

303092 - Integrated Science II

Grade Level: 9 - 12

Credits: 1

Description: The theme of this inquiry based course is constancy and change over time. Students examine constancy in the natural world as well as changes that continually occur. Students examine the formation of matter and energy, properties and interactions, formation of the solar system, and conclude with the constancy of matter and energy in living systems. Guiding Questions (based on content described in Kentucky's Program of Studies for High School Science): What are the components and structure of the universe? How are chemical and physical properties of matter related to the structure of matter? What happens when energy interacts with matter? What evidence can be found that the Earth and solar system have changed over time? What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms? What processes are involved in the flow of matter and energy through and between living systems and the physical environment? How does the law of conservation of energy help me understand the movement of energy?

Content: Integrated Science 2

Population: General

Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

AS2 Approval for Integrated Science II

303093 - Integrated Science III

Grade Level: 9 - 12

Credits: 1

Description: This inquiry based course is developed around the themes of evidence, models, and explanation. Students examine the evidence and models that scientists use to explain the natural world in order to expand on the concepts introduced in Integrated Science I and II. The course is designed to promote ways of applying and integrating scientific ways of thinking to daily life. Guiding Questions (based on content described in Kentucky's Program of Studies for High School Science): How do observable properties of matter enable us to determine the structure of atoms? What evidence can we find that the universe is in the process of continuous change? What causes chemical reactions that affect our daily lives? How are Earth's chemical reservoirs affected by the internal and external sources of energy? How do cell structures, functions, and processes affect living things? How does DNA transfer genetic information of organisms to the next generation? How does the tendency for everything to become less organized help me understand the movement of energy?

Content: Integrated Science 3

Population: General

Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

AS3 Approval for Integrated Science III

303099 - Special Topics, Interdisciplinary

Grade Level: 9 - 12

Credits: 1

Description: This course description is reserved for interdisciplinary classes involving one or more content areas other than science. This code is to be used when credit for the class is given in science and the teacher of record is science certified.

Content: Integrated Science 4

Population: General

Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

AS4 Approval for Integrated Science IV
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Science - High School Physical Sciences (304000)

304021 - Physical Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of physical science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience physical science concepts such as structure of atoms, structure and properties of matter, chemical reactions, motions and forces, conservation of energy and increase in disorder, and interactions of energy and matter. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical-thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Physical Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)

TECH	Temporary Certificate For Chemistry, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics

304058 - Introduction to Chemistry and Physics

Grade Level: 9 - 12

Credits: 1

Description: This course serves as an introduction which integrates the basic concepts of chemistry and physics. Students learn how the physical and chemical properties of matter can be explained and predicted in terms of atomic and molecular structures and forces. They also learn how balanced and unbalanced forces influence the behavior of objects. This course provides the basic foundation for further study of chemistry or physics at a greater level of complexity than would be provided by an introductory physical science course.

Content: Intro to Chemistry and Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12

M50	Endorsement For Teaching Science, Grades 5-8
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics

304521 - Chemistry I

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on problem solving techniques; bonding; equilibrium; equations. Students develop a conceptual understanding of chemistry content, included in the Program of Studies, through the use of scientific inquiry.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12

WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304522 - Chemistry II

Grade Level: 9 - 12

Credits: 1

Description: This college level course focuses on the study of the structure of matter, chemical kinetics, solution chemistry, and laboratory techniques.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304523 - Pre IB Chemistry 1

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry**Population:** General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304524 - IB Chemistry 2

Grade Level: 9 - 12**Credits:** 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry**Population:** General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry

C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304525 - IB Chemistry 3

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry

R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304526 - AP Chemistry

Grade Level: 9 - 12

Credits: 1

Description: AP Chemistry is the equivalent to a general Chemistry course usually taken in the first year of college. It is designed to comply with College Board recommendations to prepare students for an AP Exam in Chemistry. The course helps build students' understanding of the nature and reactivity of matter. The course begins with the structure of atoms, molecules, and ions; then students explore how that structure lets us predict and quantify the chemical reactions that substances undergo. AP Chemistry will enable you to develop an understanding of chemical concepts and become skilled at solving quantitative chemical problems through a combination of instructional activities. Suggested pre-requisites are Introduction to Chemistry and Algebra II. AP Chemistry is a full credit, two-semester course.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12

WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304527 - Honors Chemistry

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Chemistry, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304598 - Intro Chemistry with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Chemistry and Earth/Space Science through the use of scientific inquiry. They experience chemistry and Earth/space science concepts such as the structure of atoms, structure and properties of matter, chemical reactions, geochemical cycles, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete hands-on

experiences that require students to apply critical thinking skills. For this course, the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304599 - Special Topics: Chemistry

Grade Level: 9 - 12

Credits: 1

Description: The content of this Chemistry course is determined by the teacher/student.

Content: Chemistry

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry

C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry

304611 - Earth Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Earth/space science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience Earth/space concepts such as energy in the Earth system, geochemical cycles, formation and ongoing changes of the Earth system, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Earth-Space Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12

KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304612 - Astronomy

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of basic astronomical principles, stars, planets, and galaxies.

Content: Astronomy

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)

TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science

304613 - Meteorology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of weather, the atmosphere, clouds, and frontal weather conditions.

Content: Earth Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304614 - Oceanography

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of ocean landscapes, waves, currents, ocean ecology, and estuaries.

Content: Oceanography

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304620 - Environmental Science

Grade Level: 9 - 12

Credits: 1

Description: This course addresses topics of environmental interest/impact such as water pollution, conservation, forestry and air pollution.

Content: Environmental Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health

B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X54	Emergency Certificate For Teaching Earth Science

304621 - Honors Earth Space Science

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Earth/Space Science, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Earth-Space Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science

B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304622 - AP Environmental Science

Grade Level: 9 - 12

Credits: 1

Description: This AP course focuses on earth systems & resources, the living world, population, land & water use, energy resources and consumption, pollution and global change.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Environmental Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C52	Teaching Minor: Chemistry

C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
QBI	Teaching Field: Biology
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8BI	Temporary Provisional Certificate For Teaching Biological Science, Grades 8-12 (Option 8)
T8CH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8-12 (Option 8)
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEBI	Temporary Certificate For Biology, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TEPH	Temporary Certificate for Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X53	Emergency Certificate For Teaching Physics
X54	Emergency Certificate For Teaching Earth Science

304631 - Geology

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include erosion, glaciation, mountain formation, and diastrophism.

Content: Geology

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304698 - Principles of Technology with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop understandings of traditional physics and Earth/space science concepts, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. Students investigate concepts of force, work, efficiency, rate, and energy. Hands-on inquiry experiences develop problem-solving and critical-thinking skills. Students apply conceptual understandings to industrial, technological, and personal situations. It is suggested that Principles of Technology with Earth/Space Science be taken before either Introductory Chemistry with Earth/Space Science or Introductory Biology with Earth/Space Science.

Content: Earth-Space Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304699 - Special Topics: Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: The content of this Earth/Space course is determined by the teacher/student.

Content: Earth-Space Science

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B51	Teaching Major: Biology
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B54	Teaching Major: Biology-Health
B56	Teaching Major: Earth Science
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics

C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
M50	Endorsement For Teaching Science, Grades 5-8
R51	Area Specialization: Science Limited To Biology
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8EA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12 (Option 8)
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X54	Emergency Certificate For Teaching Earth Science

304811 - Aerospace Science

Grade Level: 9 - 12

Credits: 1

Description: In this course, students study conceptual ideas and understandings related to aerospace sciences.

Content: Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)

TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304821 - Physics I

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of physics content through the use of scientific inquiry. They experience concepts such as motions and forces, conservation of energy and the increase in disorder, interactions of energy and matter. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304823 - IB Physics

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Physics.

Content: Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304824 - Honors Physics

Grade Level: 9 - 12

Credits: 1

Description: Honors Physics is a one-year high school course for students with career plans in science, math, engineering, medicine, and similar fields. This course provides a track for students who want to learn physics as a high level, but who are not interested in the full AP Physics B program. It is an appropriate choice for students interested in medical careers.

Content: AP Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304825 - AP Physics C: Mechanics

Grade Level: 9 - 12

Credits: 1

Description: This course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The sequence is more intensive and analytic than that in the B course. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course is principally mechanics and electricity and magnetism, with approximately equal emphasis on these two areas. The C course is the first part of a sequence which in college is sometimes a very intensive one-year course but often extends over one and one-half to two years, with a laboratory component.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry

B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304826 - AP Physics C: Electricity/Magnetism

Grade Level: 9 - 12

Credits: 1

Description: This course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The sequence is more intensive and analytic than that in the B course. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course is principally mechanics and electricity and magnetism, with approximately equal emphasis on these two areas. The C course is the first part of a sequence which in college is sometimes a very intensive one-year course but often extends over one and one-half to two years, with a laboratory component.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry

C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304827 - AP Physics B

Grade Level: 9 - 12

Credits: 1

Description: This course provides a systematic introduction to the main principles of physics and emphasizes the development of conceptual understanding and problem-solving ability using algebra and trigonometry, but rarely calculus. In most colleges, this is a one-year terminal course including a laboratory component and is not the usual preparation for more advanced physics and engineering courses. However, the B course provides a foundation in physics for students in the life sciences, pre-medicine, and some applied sciences, as well as other fields not directly related to science.

NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12

KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304890 - IB Design Technology

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. Design Technology is designed to teach students how to adapt to new experiences, and to approach problems with the appropriate skills and techniques in design, as specified by the International Baccalaureate Organization.

Content: Principles of Technology (Applied Physics)

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
X53	Emergency Certificate For Teaching Physics

304898 - Intro Physics with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of physics and Earth/space science content through the use of scientific inquiry. They experience physics and Earth/space science concepts such as motions and forces, conservation of energy and the increase in disorder, interactions of energy and matter, and energy in the Earth system. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills. For this course, the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics

304899 - Special Topics: Physics/Physics II

Grade Level: 9 - 12

Credits: 1

Description: The content of this Physics course is determined by the teacher/student.

Content: Physics

Population: General

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
AJPH	Adjunct Instructor For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
B53	Teaching Major: Physics
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C52	Teaching Minor: Chemistry
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
C57	Teaching Minor: Geology
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
KPHL	Certificate for Teaching Kentucky Physics Limited, Grades 8-12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
R53	Area Specialization: Science Limited To Physics
R56	Area Specialization: Science Limited To Earth Science
T8PH	Temporary Provisional Certificate For Teaching Physics, Grades 8-12 (Option 8)
TEPH	Temporary Certificate for Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics