

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Advanced Organic Chemistry - Honors
Course Number: 00334
Course Prerequisites: Completion of Academic Chemistry with an 80% average or higher or permission of the principal.

Course Description: This honors course deals with concepts of molecular structure, atomic and intermolecular bonding and the resulting properties of organic compounds. An emphasis is placed on the recognition and classification of major functional groups and the nomenclature and structure of organic molecules. Additional concepts include chemical and physical properties as a function of molecular mass, structural arrangement and intermolecular forces, isomers, reactions, reaction mechanisms, and synthesis/preparation of organic compounds.

Suggested Grade Level: Grades 11-12

Length of Course: One Semester

Units of Credit: .5

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:

CSPG 34 Chemistry

To find the CSPG information, go to <https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx>

Certification verified by the WCSD Human Resources Department: Yes No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Honors (.5) GPA +3%

Mark Types: Check all that apply.

F – Final Average MP – Marking Period EXM – Final Exam

GPA Type: GPAEL-GPA Elementary GPAML-GPA for Middle Level NHS-National Honor Society

UGPA-Non-Weighted Grade Point Average GPA-Weighted Grade Point Average

State Course Code: 03103

To find the State Course Code, go to <https://nces.ed.gov/forum/sced.asp>, download the Excel file for SCED, click on SCED 6.0 tab, and chose the correct code that corresponds with the course.

WARREN COUNTY SCHOOL DISTRICT

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TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title: Organic Chemistry 9th edition
Publisher: Pearson
ISBN #: 9780134160498
Copyright Date: 2017
WCSD Board Approval Date: 5/14/2018

Supplemental Materials: [Click or tap here to enter text.](#)

Curriculum Document

WCSD Board Approval:

Date Finalized: 2/28/2018
Date Approved: 5/14/2018
Implementation Year: 2018-2019

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

WARREN COUNTY SCHOOL DISTRICT

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SCOPE AND SEQUENCE OF CONTENT, CONCEPTS, AND SKILLS

Performance Indicator	PA Core Standard and/or Eligible Content	Month Taught and Assessed for Mastery
Create Lewis Dot structures for ionic and covalent compounds.	3.1.C, 3.2.C, 3.4.A	August January
Determine the polarity, molecular geometry, and hybridization of covalent compounds when using the Lewis Dot structures.	3.1.C, 3.2.C, 3.4.A	September February
Differentiate between sigma and pi bonds and demonstrate the formation of these bonds	3.1.C, 3.2.C, 3.4.A	September February
Describe intermolecular forces and determine the intermolecular forces that occur between compounds.	3.1.C, 3.2.C, 3.4.A	September February
Describe the difference between organic and inorganic compounds.	3.1.C, 3.2.C, 3.4.A	September February
Describe the different types of isomerism and classify the type of isomerism exhibited.	3.1.C, 3.2.C, 3.4.A	September February
Identify compounds that are isomers.	3.1.C, 3.2.C, 3.4.A	September February
Draw the structural formula of an alkane when given the name, and vice versa.	3.1.C, 3.2.C, 3.4.A	September February
Demonstrate how the structure of a saturated hydrocarbon affects the physical properties.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	September February
Describe the basic reactions of alkanes and write the balanced equations.	3.1.C, 3.2.C, 3.4.A	September February
Determine relative boiling points and solubility from a group of saturated hydrocarbons.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	September February
Analyze the chemical and physical properties of hydrocarbons in the lab.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	September February

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

Draw the structural formula of an unsaturated hydrocarbon when given the name, and vice versa.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	October March
Determine relative boiling points and solubility from a group of unsaturated hydrocarbons.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	October March
Demonstrate how the structure of an unsaturated hydrocarbon affects the physical properties.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	October March
Describe preparation methods, basic reactions, and synthesis reactions involving various types of hydrocarbons and write the chemical equations.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	October March
Differentiate between alkenes and alkynes.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	October March
Draw the structural formula of an alcohol, ether, aldehyde, and ketone when given the name, and vice versa.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	November April
Determine the boiling pt and solubility from a group of alcohols, ethers, aldehydes, and ketones as well as organic compounds w/ varying functional groups.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	November April
Demonstrate how the structure of a(n) alcohol, ether, aldehyde, and ketone affects the physical properties.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	November April
Describe preparation methods, basic reactions, and synthesis reactions involving alcohols, ethers, aldehydes, and ketones and write the chemical equations.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	November April
Draw the structural formula of carboxylic acids, esters, and other carboxylic acid derivatives when given the name, and vice versa.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	December May
Determine the boiling pt and solubility from a group of carboxylic acids, esters, and derivatives as well as organic compounds w/ varying functional groups.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	December May

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

Demonstrate how the structure of a carboxylic acid and ester affects the physical properties.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	December May
Describe preparation methods, basic reactions, and synthesis reactions involving carboxylic acids, esters, and derivatives, and write the chemical equations.	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	December May
Formulate complex multi-step synthesis using all reactions and preparations learned throughout the course	CC.3.5.11-12, CC.3.6.11-12, 3.1.C, 3.2.C, 3.4.A	December May

ASSESSMENTS

PSSA Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include: Analyzing student work, Strategic Questioning

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include: End of chapter tests, Final Exam, Lab Reports