



NORTHWEST JACKSON IBMYP WORLD MIDDLE SCHOOL
Exploring Computer Science
Eighth Grade Course Outline & Syllabus
2019 - 2020

I. *Educator Info:* Mr. David L. Bumphis / Room 128 / dbumphis@jackson.k12.ms.us

II. *Course Description:* Information & Communication Technology II (ICT II) is an innovative instructional program that prepares students to effectively use technology in learning, communication, and life. Students in Information and Communication Technology II complete study in interpersonal and self-directional skills, basic technology operation and technology concepts, ethical issues in technology, technology communication tools, lab management and networking, financial literacy, spreadsheet applications, database applications, design applications, graphic design applications, web design applications, and career preparation.

III. *Course Style:* This course will consist of brief lectures, demonstrations, class work, homework, computer lab work, and hands-on activities.

IV. *Competencies & Objectives:*

Unit 1: Orientation, Digital Citizenship, and Keyboarding

1. Identify school policies, program policies, and safety procedures related to Exploring Computer Science.
2. Investigate social and ethical issues related to digital citizenship.
3. Interact with teachers, peers, and course materials using a learning management system.
4. Demonstrate understanding of basic keyboarding information and perform keyboarding applications.
5. Discover career opportunities within the law, public safety, corrections, and security career cluster.

Unit 2: Student Organization

1. Recognize opportunities to participate in student organizations related to technology and business.
2. Recognize how a business meeting is conducted.
3. Identify leadership and personal development styles.

Unit 3: 21st Century Tool Box

1. Differentiate between various learning styles and personality traits found within the classroom and workplace.
2. Demonstrate effective time management skills, study skills and note-taking strategies.
3. Explore careers in each of the 16 national career clusters.
4. Complete interest-profiling and career-exploration exercises.
5. Complete a career-plan builder.
6. Develop an Individual Success Plan (ISP).
7. Demonstrate effective public speaking skills.
8. Demonstrate knowledge of 21st Century skills.

Unit 4: Graphic Design

1. Discover the purposes of graphic design applications.
2. Demonstrate the proper use graphic design applications.
3. Investigate graphic design skills and computer science in the context of arts, A/V technology, and communications and the marketing career clusters.

Unit 5: Database Applications

1. Perform database applications.
2. Investigate database skills and computer science in the context of the health science and education career clusters.

Unit 6: User Experience Design

1. Identify and explore user needs to understand the purposes of design.
2. Develop paper prototypes to test ideas and assumptions.
3. Compare and contrast different types of apps.
4. Develop digital prototype of an app.
5. Revise and formulate improvements.
6. Investigate career opportunities in the STEM (software development or engineering) career cluster.

Unit 7: Data and Computers

1. Explore data collection and representation using the problem-solving process.
2. Identify and design ASCII and binary systems.
3. Design and analyze digital security systems using encoding.
4. Analyze and apply appropriate encoding systems.
5. Investigate career opportunities in the STEM (cyber security or genetics) career cluster.

Unit 8: Data and Society

1. Use concepts to solve problems using data.
2. Investigate how data is collected.
3. Analyze and revise data to make it useful.
4. Critique data to make and support decisions using that data.
5. Construct a plan to automate data decisions.
6. Apply concepts of data collection and interpretation of data to make a recommendation.

Unit 9: Physical Computing

1. Explore innovations in computing and computing devices.
2. Investigate user interface properties.
3. Explore microcontrollers.
4. Investigate career opportunities in the STEM (data science or mathematics) career cluster.

V. Course Materials (Required Daily)

- Ear buds
- 1 GB flash drive

VI. Course Policies

- **Attendance/Tardy Policy**

- * Students are expected to attend class daily and be on time.
- * Students are subject to written documentation for every incidence of tardiness.
- * Students will not gain entry into the class without the permission of an administrator.

- **Class Participation Policy**

- * Students are expected to complete all assignments and participate in class discussions.

- **Missed Exams or Assignments**

- * Makeup work is YOUR responsibility. There is a one day grace period for each absence.

VII. *Assessments & Grading*

- Students will be graded on the following:
 - * Assessments = 50%
 - * Daily = 40%
 - * Homework = 10%