



Republic of the Philippines

Department of Education

DepEd Complex, Meralco Avenue, Pasig City

STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM

COMPUTER PROGRAMMING (.NET TECHNOLOGY)

Grade 11/12

Course Description:

This course enables learners to develop applications using HTML5, CSS3, JavaScript, and .NET technology, demonstrating proficiency in programming, software development, and problem-solving skills, which are applicable across various tech sectors. Upon completion, learners are eligible to take assessments to earn National Certification level III in Programming (.Net Technology), higher education, and careers in the computer programming industry.

Elective: Technical Professional

Prerequisite: None

Time Allotment: In Grade 11, 320 hours for two semesters, 8 hours per week/In Grade 12, 320 hours for one semester, 16 hours per week

Schedule: First/Second Semester

QUARTER 1

CONTENT STANDARD	The learners demonstrate an understanding of fundamental concepts and principles of syntax and elements in Hyper Text Mark-Up Language (HTML) and the properties and values used in Cascading Style Sheet (CSS) in developing and designing a website.	
PERFORMANCE STANDARD	The learners create a web portfolio using Hyper Text Mark-Up Language (HTML).	
	LEARNING COMPETENCIES	CONTENT
	1. Discuss the HTML fundamentals	HTML Fundamentals <ul style="list-style-type: none"> • Versions • Role • Web editors • Structure/ Syntax
	2. Use paragraph formatting elements	HTML paragraph formatting elements

3. Apply list attributes and values in web page designs	HTML List <ul style="list-style-type: none"> • Attributes • Values
4. Create HTML documents with multimedia elements	HTML Multimedia <ul style="list-style-type: none"> • Image • Video • Audio
5. Use table elements, attributes, and values in designing web pages	HTML Table Elements, Attributes and Values
6. Create hyperlinks between web pages	HTML Links
7. Use frames in designing web pages	HTML Frames
8. Create HTML form web pages and provide fields where user can enter data	HTML Forms
9. Perform installation of Integrated Development Environment (IDE) application	Installation of Integrated Development Environment (IDE) <ul style="list-style-type: none"> • System requirements • Installation procedures
10. Discuss Cascading Style Sheet (CSS) fundamentals	Cascading Style Sheet (CSS) Fundamentals <ul style="list-style-type: none"> • Definition • Role • Syntax • Types
11. Apply the different CSS Selectors	CSS Selectors <ul style="list-style-type: none"> • Class • ID

QUARTER 2

CONTENT STANDARD	The learners demonstrate an understanding of fundamental principles, syntax, and the properties and values of Cascading Style Sheet (CSS) rule in designing and developing interactive webpages.	
PERFORMANCE STANDARD	The learners create a web portfolio applying Cascading Style Sheet (CSS) rules.	
LEARNING COMPETENCIES		CONTENT
1. Apply CSS text, font, and color in designing web pages		CSS Text, Font, Color
2. Apply CSS gradient and opacity		CSS Gradient and Opacity
3. Create layouts of web pages using the CSS box model		CSS Box Model
4. Use the CSS list and link properties and values in creating web pages		CSS List and Links
5. Utilizes CSS Z-index, position, float properties and values in designing web pages		CSS Z-index, Position, Float
6. Create web pages with a CSS image gallery		CSS Image Gallery
7. Apply CSS pseudo class and elements		CSS Pseudo Class and Elements
8. Apply CSS flexbox layout and media queries in web designs		CSS Flexbox Layout and Media Queries

9. Create responsive websites using CSS Responsive Web Development (RWD) Layouts	CSS RWD (Responsive Web Development) Layouts <ul style="list-style-type: none"> • Grid View • Media Queries • Images • Videos • Frameworks • Templates
10. Discuss the fundamentals of JavaScript	Introduction to JavaScript <ul style="list-style-type: none"> • History and versions • JavaScript syntax and comments
11. Demonstrate the structures of statements, algorithm, flowchart, and pseudocode	Statements, Algorithm, Flowchart, and Pseudocode
12. Apply variables, data types, and functions in creating web applications	Variables, data types and functions

QUARTER 3

CONTENT STANDARD	Demonstrate an understanding of the principles of web responsive development by using JavaScript functions and C# programming language.	
PERFORMANCE STANDARD	The learners create a web application project using JavaScript and C# programming language.	
LEARNING COMPETENCIES		CONTENT
1. Use JavaScript operators in problem solving		JavaScript Operators
2. Use event handlers and event listeners in creating web applications		JavaScript Events
3. Use conditional and switch statements in creating web applications		Control Flow
4. Apply loops in creating a program using while, do while, and for loops		Loops

5. Use JavaScript arrays in creating a program	Arrays
6. Create objects to display the set of properties and values	JavaScript Objects
7. Apply Document Object Model (DOM) nodes in creating a web document	DOM (Document Object Model) Node
8. Discuss the C# fundamentals	C# Fundamentals <ul style="list-style-type: none"> • History • Features • C# program structure and syntax
9. Use C# data types, variables, strings, and constants in creating a web application	C# Data Types, Variables, Strings, and Constants
10. Apply C# operators and decision making in problem solving	C# Operators and Decision Making
11. Use the C# iteration statements in creating a web application	C# Loops (iteration)
12. Apply C# classes, methods and structure in creating a web application	C# Classes, Methods and Structure
13. Create web application programs that contains C# arrays	C# Arrays
14. Apply the C# Object-Oriented Programming (OOP) approach in creating a web application	C# OOP approach <ul style="list-style-type: none"> • Interfaces • Encapsulation • Polymorphism • Inheritance
15. Utilize the C# file input/output in creating, deleting, and reading web applications	C# File Input/Output

QUARTER 4

CONTENT STANDARD	Demonstrate an understanding of the principles of responsive web development by exploring features of ASP.NET Model View Controller architecture and back-end database, conversion of web to mobile application, and computation of service costing.	
PERFORMANCE STANDARD	The learners create a web application following the procedures of managing the list of tasks of Creating, Reading, Updating, and Deleting (CRUD) operations with a database backend, conversion of web to mobile application, and computation of service costing.	
LEARNING COMPETENCIES		CONTENT
1. Discuss the ASP.NET Model View Controller (MVC) fundamentals	ASP.NET MVC Fundamentals <ul style="list-style-type: none"> • Introduction • History • Advantages of ASP.NET Model View Control (MVC) • Pattern 	
2. Discuss the ASP.NET MVC environment and life cycle	ASP.NET MVC - Environment ASP.NET MVC - Life Cycle <ul style="list-style-type: none"> • Application life cycle • Request life cycle 	
3. Perform configurations of the routing process in directing an http request in an ASP.NET MVC project using controllers and actions	ASP.NET MVC – Routing, Controllers, and Actions	
4. Use filters, selectors, and views in creating projects	ASP.NET MVC – Filters, Selectors, and View	
5. Apply the ASP.NET MVC - data model	ASP.NET MVC - Data Model	
6. Use ASP.NET MVC – helpers in creating realistic HTML controls	ASP.NET MVC - Helpers	
7. Create bridges between the http request and the action methods (Model Binding)	ASP.NET MVC - Model Binding	

8. Discuss the framework of ASP.NET MVC – database and adding validation to a model	ASP.NET MVC – Databases and Validation
9. Execute security features in a web application	ASP.NET MVC – Security, Caching, Data Annotations, and NuGet Package
10. Create ASP.NET MVC - web application program interface (API)	ASP.NET MVC - Web API
11. Convert website to mobile version	Convert Website to Mobile Version Using A Third Party Application (Appgeyser, Android studio, Web2apk)
12. Compute the service costs for web development, web hosting	Service Costing in Web Development <ul style="list-style-type: none"> • Direct • Indirect

MATERIALS, TOOLS, AND EQUIPMENT

TOOLS	EQUIPMENT	MATERIALS
Computer Software e.g. - IDE - Libraries	Network Computer with peripherals	Learning materials/ guide
Internet access	Server	Practice materials
Application servers e.g. - database - web	Printer	Hand-outs
	White board	Reference books
	LCD Projector and screen	
	Ergonomic computer tables and chairs	