

វិទ្យាស្ថានជាតិទូរគមនាមន៍ និងព័ត៌មានវិទ្យា

National Institute of Posts, Telecoms, and ICT

School of Computer Science

គំរោងមេរៀន

Course Syllabus

មុខវិជ្ជា

Subject

ការអភិវឌ្ឍន៍គេហទំព័រ កំរិត១

Web Development I

គ្រូឧបនិមន្ត

Lecturer

ឈួន សុភម៉ានីត

CHHUON Sopheakmanith

2016

Course Syllabus

Subject

Web Development I

1- Purpose of Study:

As you search on the internet for document, entertainment or education, you will meet many webpages as result. But have you ever noticed or wondered how those websites are built? How do they work? What skills are necessary for building them?

This course will guide you how to create websites by using **HTML5**, **CSS3** and **JavaScript**, and how to make web pages as responsive that can adapt to all the device screen size.

Finally, you'll be able to develop static websites and design webpage. It is a model in the future and fully prepared for next step in **web development II** or design course or specialization.

2- Course Objectives / Learning Outcomes

After completing the Web Development I course, students will be able to perform the following tasks:

- Learn and be able to create static webpages by using HTML5.
- Know how to apply and use style to webpages.
- Can use JavaScript and using JavaScript library in webpages
- Understand what it takes to use Bootstrap
- Create a webpage and design UI template by using bootstrap.
- Understand about responsive webpage

3-Course Outlines

- Part I: HTML5
 - Chapter I: Getting started with HTML 5
 - Chapter II: Working with Text
 - Chapter III: Working with Lists, Tables, Frames
 - Chapter IV: Working with Hyperlinks, Images and Multimedia
 - Chapter V: Working with Forms and Controls
 - Chapter VI: Working with Events
 - Chapter VII: Working with Graphics
- Part II: CSS3
 - Chapter I: Overviews of CSS
 - Chapter II: Backgrounds and Color Gradients in CSS
 - Chapter III: Fonts and Text Styles
 - Chapter IV: Creating Boxes and Columns Using CSS

- Chapter V: Displaying, Positioning and Floating an Element
- Chapter VI: List Styles
- Chapter VII: Table Layouts
- Chapter VIII: Pseudo-classes and Pseudo-elements
- Chapter IX: Effects, Frames, and Controls in CSS
- Part III: JavaScript
 - Chapter I: Overviews of JavaScript
 - Chapter II: Functions, Events, Image Maps, and Animations
 - Chapter III: JavaScript Objects
 - Chapter IV: Working with Browser Objects
 - Chapter V: Working with Document Object
 - Chapter VI: Document Object Model
 - Chapter VII: Validation, Error, Debugging, Exceptions Handling and Security.
 - Chapter VIII: Implementing the Advanced Features of HTML5.
 - Chapter IX: JSON and AJAX
- Part IV: JavaScript Library and CSS framework
 - Chapter I: JQuery
 - Chapter II: Bootstrap

2- Course Structure:

Weeks	Descriptions	Lab	Theory
Part I: HTML			
1	Chapter I: Getting started with HTML 5 <ul style="list-style-type: none"> - Definition - History - Choosing Text editor - Structure and rule - Creating and saving an HTML Document - Opening the HTML Document in a web Browser - Color - Modify the Background of an HTML web page - Specifying Metadata about an HTML web page - Specifying Keywords for search Engines - Id and Class Attribute 		1.5
1.1	Practice : Create First Web Page	1.5	
	Chapter II: Working with Text		1.5

	<ul style="list-style-type: none"> - Adding Plain Text to an HTML web page - Adding Text in a New Line - Creating Headings on a web page - Creating a Paragraph - Creating a Horizontal Rule - Creating a Subscript and Superscript - Aligning the Text - Formatting the text - Grouping the text - Indenting Quotations - Working with Character Entities - Commenting the text 		
	Practice : Creating one page article page	1.5	
	<p>Chapter III: Working with Lists, Tables, Frames</p> <ul style="list-style-type: none"> - Working with Lists <ul style="list-style-type: none"> o Unordered List o Ordered List o Definition List o Nested List - Working with Tables <ul style="list-style-type: none"> o Creating a Table o Specifying a Caption to a Table o Adding a Table Heading o Setting the table Border o Aligning a Table and Cell content o Setting the width of a Table and Table Columns o Changing the Background Color of a Table o Setting Cell Padding and Cell Spacing o Spanning Rows and Columns o Nesting Tables - Working with Frames <ul style="list-style-type: none"> o Creating a Frames o Defining New Element-Specific Attributes o Specifying width and Height of a Frame o Applying Hyperlink Targets to a Frame 		1.5
	Practice : Creating List , Table and Frames	1.5	
	<p>Chapter IV: Working with Hyperlinks, Images and Multimedia</p> <ul style="list-style-type: none"> - Working with Hyperlinks <ul style="list-style-type: none"> o Creating a Hyperlink o Setting the Hyperlink Color 		1.5

	<ul style="list-style-type: none"> ○ Linking Different Sections of a Web Page - Working with images <ul style="list-style-type: none"> ○ Inserting an Image on a Web Page ○ Displaying Alternate Text for an Image ○ Adding a Border to an Image ○ Aligning an Image ○ Using Images as Links - Creating Image Maps - Working with Multimedia <ul style="list-style-type: none"> ○ Embedding Multimedia on a Web Page ○ Creating a Link to Multimedia File ○ Using the <object> Tag to Insert Objects 		
	Practice : Create one static web sites that contains All multimedia type	1.5	
	Chapter V: Working with Forms and Controls <ul style="list-style-type: none"> - Creating an HTML Form - Specifying the Action URL and the Method to Send the Form - Adding Controls to an HTML form <ul style="list-style-type: none"> ○ Using the <input> Tag to Add Controls ○ Adding Text Area ○ Creating a Customizable Button ○ Adding a Selection Control ○ Apply Validation to Form - Understanding New Form Elements <ul style="list-style-type: none"> ○ The datalist Element ○ The keygen Element ○ The output Element - Grouping the Controls of HTML Forms - Specifying a Label for a Control 		1.5
	Practice : Create one form to adding an article	1.5	
	Chapter VI: Working with Events <ul style="list-style-type: none"> - The Window Event Attributes - The Form Events - The Mouse Events - The Media Events 		1.5
	Chapter VII: Working with Graphics <ul style="list-style-type: none"> - Canvas <ul style="list-style-type: none"> ○ Canvas with Line ○ Canvas with Text ○ Canvas with Gradient ○ Canvas with Image 		

	- SVG		
	Practice : Create form applying Events and Graphics	1.5	
Part II: CSS			
	Chapter I Overviews of CSS <ul style="list-style-type: none"> - Discussing the Evolution of CSS - Understanding the Syntax of CSS - Exploring CSS Selectors <ul style="list-style-type: none"> o The Universal Selector o The Type Selector o The Class Selector o The ID Selector o The Child Selector o The Descendant Selector o The Adjacent Sibling Selector o The Attribute Selector o The Query Selector - Inserting CSS in an HTML Document <ul style="list-style-type: none"> o The Internal Style Sheet o The External Style Sheet o The Inline Style - Defining Inheritance in CSS 		1.5
	Practice : Using External and Internal CSS and Working with query Selector	1.5	
	Chapter II Backgrounds and Color Gradients in CSS <ul style="list-style-type: none"> - Exploring Background of a Web Page - Exploring Color Properties <ul style="list-style-type: none"> o The Opacity Property o The RGBA Value Format o HSL and HSLA Values Format - Exploring Gradient Properties 		1.5
	Chapter III Fonts and Text Styles <ul style="list-style-type: none"> - Understanding Font - Exploring Font Properties in CSS - Introducing Web Font - Applying CSS to Text 		
	Chapter IV Creating Boxes and Columns Using CSS <ul style="list-style-type: none"> - Exploring the Box model - Exploring Line Box model - Exploring the Template layout model - Exploring the Multi-column model 		

	Practice : Using background color Gradient properties, font and template	1.5	
	<p>Chapter V Displaying, Positioning and Floating an Element</p> <ul style="list-style-type: none"> - Controlling the display of an element using CSS <ul style="list-style-type: none"> ○ Exploring the display properties ○ Exploring the visible properties - Positioning an Element <ul style="list-style-type: none"> ○ Fixed positioning ○ Relative positioning ○ Absolute positioning ○ Floating an element using CSS 	1.5	
	<p>Chapter VI List styles</p> <ul style="list-style-type: none"> - The list-style-type properties - The list-style-image properties - The list-style-position properties - The list-style shorthand properties 		
	<p>Chapter VII Table layouts</p> <ul style="list-style-type: none"> - The table-layout properties - The caption-side properties - The border-collapse properties - The border spacing properties - The empty-cells properties 		
	Practice: Working with Positioning, list and Table layouts	1.5	
	<p>Chapter VIII Pseudo-classes and Pseudo-elements</p> <ul style="list-style-type: none"> - Exploring the Pseudo-Classes <ul style="list-style-type: none"> ○ Dynamic Pseudo-classes ○ The Target Pseudo-classes ○ The language Pseudo-classes ○ UI element states Pseudo-classes ○ Structural Pseudo-classes - Exploring the Pseudo-Elements 	1.5	
	<p>Chapter IX Effects, Frames, and Controls in CSS</p> <ul style="list-style-type: none"> - Exploring Difference types of Effects in CSS <ul style="list-style-type: none"> ○ Opacity Effects ○ Transition Effects ○ Transformation Effects ○ Animation Effects - Creating Frames using CSS - Customizing Controls Using CSS 		
	Practice: Working with Pseudo and Effects , Frames and Controls	1.5	

Part III: JavaScript			
	Chapter I Overviews of JavaScript <ul style="list-style-type: none"> - Introduction - Exploring the Feature of JavaScript - Usage of JavaScript - Exploring Programming Fundamentals JavaScript <ul style="list-style-type: none"> ○ Exploring the Lexical Structure of JavaScript ○ Exploring Variables ○ Exploring Operators ○ Exploring Control Flow Statements ○ Exploring Popup Boxes 		1.5
	Practice: Working with usage of JS and Programming Fundamentals	1.5	
	Chapter II Functions, Events, Image Maps, and Animations <ul style="list-style-type: none"> - Exploring Functions - Exploring Events - Exploring Image Maps - Exploring Animation 		1.5
	Chapter III JavaScript Objects <ul style="list-style-type: none"> - Exploring Object in JavaScript - Exploring the Standard/Build-in JavaScript Objects <ul style="list-style-type: none"> ○ The String Object ○ The RegExp Object ○ The Boolean Object ○ The Number Object ○ The Array Object ○ The Math Object ○ The Date Object 		
	Chapter IV Working with Browser Objects <ul style="list-style-type: none"> - Understanding Window Object - Understanding Navigator Object - Understanding History Object - Understanding Screen Object - Understanding the Location Object 		
	Practice: Working with function, events, JavaScript Object and Browser Objects	1.5	

	<p>Chapter V Working with Document Object</p> <ul style="list-style-type: none"> - Describing the Document Object <ul style="list-style-type: none"> o Exploring Document Object Collections o Exploring Document Object Properties o Exploring Document Object Methods - Exploring Cookies <ul style="list-style-type: none"> o Creating and Store Cooking o Reading Cooking 		1.5
	<p>Chapter VI Document Object Model</p> <ul style="list-style-type: none"> - Understanding DOM Nodes - Understanding DOM Levels - Understanding DOM Interfaces 		
	<p>Chapter VII Validation, Error, Debugging, Exceptions Handling and Security</p> <ul style="list-style-type: none"> - Introducing Form Validation - Exploring Error in JavaScript - Debugging JavaScript Programs - Handling Exception - Introducing Security in JavaScript 		
	Practice: Working with Document Object and Cookies, Object Model, Validation, Debugging, Exception handling and Security	1.5	
	<p>Chapter VIII Implementing the Advance Feature of HTML5</p> <ul style="list-style-type: none"> - Creating Editable Content - Checking spelling mistakes - Exploring Custom Data Attributes - Exploring Microdata - Exploring Client-Side Storage - Exploring the Drag and Drop Feature - Exploring the ARIA Accessibility - Exploring Offline Web Application - Exploring Web communication - Exploring Cross-Document Messaging - Exploring Desktop Notification - Creating 2D Graphics - Implementing Modernizr 		1.5
	Practice: Implementing Advance feature of HTML	1.5	
	Chapter IX JSON and AJAX		1.5

	<ul style="list-style-type: none"> - JSON <ul style="list-style-type: none"> o Introduction o Syntax o Data Type o JSON Object o JSON Array o JSON Parse o JSON Stringify o JSON HTML - AJAX <ul style="list-style-type: none"> o Introduction o XML Http o Ajax Request o Ajax Response 		
	Practice: Working with JSON and AJAX	1.5	
Part IV: JavaScript Library and CSS framework			
	Chapter I JQuery <ul style="list-style-type: none"> - Introduction and Installation - jQuery Selectors - jQuery Methods to Access Attributes - jQuery Traversing Methods - jQuery Manipulators - jQuery Events - jQuery Animation Effects - Ajax with jQuery 		3
	Practice: Working with JQuery	3	
	Chapter II Bootstrap <ul style="list-style-type: none"> - Introduction and Installation - Grid System - Typography - Code - Table - Form - Button - Image - Responsive Utilities 		3
	Practice: Working with Bootstrap	3	
	Final Exam	1.5	
Total Weeks		16	16
Total Hours		30	30
Total Sessions		21	

III- Facilities and Material of Study:

1. LCD projector for PowerPoint Presentation
2. Handouts for every students
3. A small speaker for lecturer

IV- Main Text Books:

1. HTML 5 Black Book: Covers Css3, JavaScript, XML, XHTML, Ajax, PHP and JQuery, Kogent Learning Solutions Inc. – 2016, ISBN-13: 978-93-5004-095-9

V- Course Scores:

1. Discipline and Attendance	10 %
2. Assignment and Lab	15 %
3. Mid-term	15 %
4. Final Exam	60 %
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Total Scores	100 %

VI- References

1. JavaScript The Good Parts, Douglas Crockford first edition – 2008, ISBN-13: 978-81-8404522-2
2. HTML5 in simple steps, Kogent Learning Solutions Inc. – 2012, ISBN: 978-93-5004-086-7

VII- Lecturer:

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