

Program Courses – Summary

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Image processing [420-T1M-ID]

- Introduction to Adobe Photoshop image processing software. Configuration and environment of the software. Drawing tools and text tools. Selections. Scanning and image capture technologies. Transferring images to a computer. Graph creation. Techniques for adjusting brightness and color. Retouching and repairing photos of conventional or raw files. Image manipulation techniques. Techniques for creating composite images. Preparation of images for printing, for the Internet or multimedia. Color modes, pixel depths, and resolution. General methodology. Professional quality projects and presentation techniques.

Fundamental Principles of Colour and Design [420-NCC-ID]

- Fundamental principles and terminology of Design. Design process. Pictorial composition and iconic reading (gestalt). Formal elements and notion of space. Formats, diagonals, lines and points of force, and focal points. Principles of subordination and hierarchy, unity, repetition, scale, similarity, and balance. Theory of color perception. Color composition. Additive and subtractive syntheses. Chromatic scale. Harmony of colors and visual impact. Impact of the media on color. Creativity and the creative individual. How ideas are formed and how these are articulated to form a concept. Training in creativity.

Computer Illustration [420-1L1-ID]

- Introduction to the Adobe Illustrator illustration software. The vector image. Configuration and workspace. Creation and backup of documents. Creation and drawing of basic shapes, Bezier's curves. Contours and fills. Color palette and transformation palette. Custom brushes. Sample and custom sample library. Gradients. Custom perspective grid and isometric perspective. Transformation of

objects such as by rotation, inclination, volume, light, and shadow. Selection and addition of texts, types of characters, formatting of text, creation of columns, and adjustment of the flow of text. Adjusting text around a graph. Mix of objects, shapes, and colors. Clipping mask and opacity creation. Masks of images with shapes. Styles of graphics, filters and special effects. Creations in 3D. Web graphics. Layout and preparation for printing. Exporting for different media.

Web Design & Development I [420-CW1-ID]

- History of the Internet. General operations of the global network (IP, DNS, domains, servers, http, etc.). Learning languages such as HTML, XHTML, HTML5. Tags and attributes. Basic structure of an HTML l file. Prioritization of information. Management of text and headlines, creation of hyperlinks, insertion of images, tables, forms as well as audio, video, and multimedia elements. Basics of creating navigation interfaces. Stylize pages of a site using Cascading Style Sheets (CSS). Good practice in coding and referencing. Putting websites online.

User Interface Design [420-CIU-ID]

- Definition of an interface. Adapting the interfaces to their functions. The semantic web. Microdata. Importance of content. Layout grids. Bootstrap. Accessibility, Canadian law, and available tools. Visitors with blindness or motor disorders.

Advanced Image Processing [420-T1A-ID]

- Using a matrix image manipulation software. Fine selection and importing of images from another graphics application. Masks and extractions. Filter and distortion and effect correction with filters. Special effects and special filters. Composite images. Using filters and layers. Palette of specific colors and fit. Use of shapes and styles. Use of textures and color attributes. Opacity mapping techniques. Adjusting hues

and saturation. Design of a composite image. Advanced photographic retouching and varied exports.

Interactive Content I [420-C11-ID]

- Make and manage transitions and animations of images and objects using HTML5 and CSS3. Properties of transitions. Duration and acceleration. JavaScript and triggering. Trigger delay. Shortened notation. Implementation of the transition specification based on browsers and their versions. Perform text and background color transitions, moving text, and sizing elements. Animate textual or graphic menus. Create tooltips. Animation of the CSS properties. Animate SVG. Animation of images. Duration, delays, JavaScript Events, interpolation, acceleration and deceleration, iterations, and transformation of elements. How to use animation libraries. Implementation and material requirements.

Typography [420-TYP-ID]

- History of typography and calligraphy. Evolution of typography. Terminology. Straight lines and different shapes. Units of measurement. Classification of types. Character palette and paragraphs. Kerning. Family of classic and modern characters. Anatomy of typographic characters. Readability and style. Presentation, composition and layout. Effectiveness of the drawing. System grids. Type of design. Define templates in InDesign. Digital environment. Development of a typographic project based on the original idea.

Layout Fundamentals for Websites [420-NMW-ID]

- Effectiveness for layout of a web page using different layout styles. Frames, tables, and other organizational structures. Different screen sizes and resolutions. Hierarchical organization of a site. Types of website organization such as task-oriented, alphabetical, and chronological. Accessibility of the site. Main features and examples of websites. Erection of an e-commerce site. Shopping baskets, addresses, payment methods, order form, confirmation, and order tracking. Section for messages. Writing search engines. Marketing of the site. Privacy policy. Email and subscription to the site. Security of a site. Prevention of phishing, hoaxes, and spam. Technology and resources needed to support the research sites. Organization of research results. Optimization of the loading time of the images. Display constraints on mobile devices. Display on mobile device screens. Input controls on mobile devices.

Fundamentals of Programming [420-NFP-ID]

- Life cycle of the development of a program. Programming terms. Design and coding. Programming tools. Introduction to Visual Basic, IDE, Controls and Events. Numbers, characters, and data formatting on the screen. Decisional structures. Relational and logical operators. Structures, i.e. “If .. then” and “If .. then .. else”. Case structures. Procedures and functions. Modular design. “Do” and “For” loops...“Next”. List processing with loops. Tables, sorting, and research. Sequential files. Access to data in a batch file. Selection checks. Basic controls. Tables and objects. Events. Heritage.

Digital Photography [420-PHN-ID]

- Basic principles of photography. Photographic genres. The pictorial composition. Framing. Angles and axes of shooting. Using an SLR (reflex) digital camera in automatic and manual modes in RAW format. Focusing, depth of field, light temperature and white balance, light reading, aperture, overexposure and

underexposure, shutter speed, focal length, and ISO factor. Creative modes and presets. Shooting in natural and artificial lighting. Photo of day and night. Photo studio and use of the flash. Work organization, methodology, image processing in RAW format, and creation of a final image. Creation of a photographic presentation.

Interactive Content II [420-C12-ID]

- Create and manage animations using JavaScript, JQuery and AJAX. Transition and animation of simple elements and components. Transition classes, custom transition classes, and CSS transitions. Simultaneous use of transitions and animations. Duration and explicit duration. JavaScript hooks. Transitions on initial renderings and between elements. Transition modes. List, input and output transitions, displacement, and scaling. Reusable and dynamic transitions. Simple and dynamic state transitions. Organization and prioritization of transitions in components. The mixins. Animation with and without build tools. Using animation libraries.

Audio and Video Techniques [420-TAV-ID]

- Fundamental notions of audio. Introduction to the sound editing software, Adobe Audition. Creating audio files such as monos and stereos. Perform sound editing. Adjust the amplitude and the balance. Copy/paste sound samples. Creation of multitrack audio montages. Audio capture. Improvement of an audio file. Filters and effects. Backup, compression, and exportation. Basic concept of video editing. Introduction to video editing software, Adobe Premiere. Tools and techniques of assembly. Improved sources. Color correction. Transitions, filters, audio and video effects. Exporting and importing audio tracks. Backup, compression and export. Introduction to animation software and special effects video, Adobe After Effects. Animation, color adjustments, deformations and transformation, extraction, use of the green screen, compositing, use of cameras and lighting in a 3D environment. Related uses of the three software. Exporting multimedia elements for use in interactive production.

Web Design and Development II [420-CW2-ID]

- Revision of HTML5 and CSS3. Declaration of a website according to the screen format and devices used. Breaking points. Media-queries. The mobile approach. Good practices in web design for mobile devices. Responsive design. Using flex containers and managing their items. Flex grids. Using containers and flex grids in the production of a responsive website.

Integration Project [420-P1N-ID]

- Identifying the needs of a personal website. Plan and structure of the site. Planning, design, and development of a personal website. Identifying the needs of a corporate website. Plan and structure of the site. Planning, design, and development of a corporate website. Identifying the needs of an e-commerce website. Plan and structure of the site. Planning, designing, and development of an e-commerce website.

Database Fundamentals [420-CBD-ID]

- Subjects: Principles of database systems. Relational databases. Introduction to SQL. Database design. Normal form. SQL objects. Reserved words, types of data. Scalar functions and operators. Object creation and modification. Referential integrity constraints. Queries. SELECT, WHERE statements. Sub-queries and operators. GROUP BY statement. Aggregate functions and other common SQL functions. Union operators (join). Editing of table content. Insertion of rows. Update, deletion and modification statements. Indexes, grouped or not grouped. Correspondence between transaction indexes and transaction statements. Operator LIKE. Optimization of queries. DDL views and statements. Creation of indexed views. Trigger. AFTER and INSTEAD OF. Logging transactions. Data blocking and blocking

settings. SELECT statement with block. User authentication. Security and user accounts. Privileges and permissions

Script Language I [420-LS1-ID]

- The role of the developer. Execution of programs and types of languages. Programming logic and algorithms. JavaScript and its programming structure. Comments. Events, functions, values, and types. Creation, storage and uses of string and numeric variables. Conditions, comparison operators, and logical operators. The “if”, “else”, “else if”, “switch” and “ternary” structures. Creation and use of the “while”, “do while” and “for loops”. Creation and use of functions and methods. Creation and use of objects and tables. Uncover script. Analysis of typical cases and group programming workshops.

Data Processing Technologies [420-TTD-ID]

- Syntax history and use of XML. XML transfer and export from a database. XML management using CSS, XLS and XHTML. History and JSON syntax. Revision of JavaScript objects. Introduction to the most used APIs.

Development of a Dynamic Website [420-DWD-ID]

- Identifying the needs of the website to be created. Planning the structure and layout of its pages. Preparation, design, and development of a site. Iterative process. Finalization of the website and submission of the project. Presentation of the final product.

Server-Side Technologies [420-TCS-ID]

- Introduction to the Client - Server script. Installation and configuration of Apache, MySQL and PHP. Structure and syntax of PHP. Learning about PHP, such as constants and variables, passing variables (URLs, forms, sessions and cookies). Decision/ Repetition control structures. Tables, searching, and sorting. PHP alternative syntax. MySQL structure and syntax. PHP and MySQL and how they work together. Connection to the MySQL server. Queries in the databases. Creating tables and using tables for displaying data. Forms and input elements. Processing of data from forms. Inserting, deleting, and editing a record in a database. GD Library. File types supported by PHP. GD in PHP. Loading images. Converting image file types. Validation of the data of the user. Verification of format errors in a PHP script. Key relational databases and standardization. Creation of a database with MySQL. PHP for email. PHP Sessions and Cookie Functions. Cookies in PHP. Rules for CMS. Using a database to manage a CMS. Coding of a CMS. Transaction pages. User interface, functionality, and management. E-commerce and shopping baskets. Features of an e-commerce site. Preparing databases for a bulletin board system. Coding of a bulletin board system. Administration of a forum including the accounts and the management of the users as well as the files Log and utility. User Authentication. Interpretation and analysis of a website's data. Debugging the PHP code.

Script Language II [420-LS2-ID]

- Learning about AJAX, such as recovery and processing of text and XML. Learning about JQuery, such as general concepts, syntax, objects, properties and methods, interaction with HTML and CSS, JQuery/DOM conversion, DOM modification using JQuery, effects, associate data with elements, and events. Selectors and filters. Manipulation of attributes. Selectors and advanced filters. Browse the DOM with JQuery. Chaining methods. Event management. The forms. JQuery animation. Additional use of AJAX and JQuery.

Marketing Concepts for the Web [420-CMW-ID]

- Marketing principles and strategies. Marketing and the Web. Electronic marketing and strategies. Electronic marketing planning process. Creation of an electronic marketing plan. Challenges of the globalization of electronic marketing. Electronic payment and security issues. Technological needs and preparation. Telecommunication costs. Challenges of using wireless. Code and ethics. Copyright, trademark, patent, license and privacy policies. Governance online. Fraud. Sources of marketing information. Social media. Client and server-side data collection. Databases in marketing and database warehouse. Consumer characteristics online. Social context for the exchange on the Internet. Three main sectors of the market (business, consumers and governments). Major market segments. B2B (inter-company) and B2C (retail) markets. Integrated marketing communication. Internet advertising, i.e. knowing trends and formats. Product strategies for online marketing. Point of view of the buyer and the seller. Payment methods. Distribution channels. Intermediate channels. Consumers online. Differentiation strategies. Positioning strategies. Offer of products online. Creating a value for the consumer. Promotions. Marketing communication media. Digital media. Search engine. Communities online. Social networks.

Portfolio Production [420-P01-ID]

- Characteristics of a professional portfolio. Ranking elements of a portfolio. Format and expected level. Labeling elements of a portfolio. Preparation of a portfolio. Assessment of the strengths, weaknesses, and quality of the portfolio. Maintenance of a portfolio. Copyright laws and ethics. Legal implications of using unauthorized documents. What to protect and how to protect your work. Transportation considerations or electronic shipping. Personal promotion resources. Identification of clients and potential employers. Identification of employment counselors, professional publications, professional organizations, trade shows, and seminars. Interview simulations and final presentation of the portfolio.