# CERTIFICATE SUPPLEMENT
# EITCA/CG/JQF23004746

**Certificate ID:** EITCA/CG/JQF23004746
**Certificate type:** The European Information Technologies Certification Academy Programme
**Academy name:** EITCA Computer Graphics Programme (EITCA/CG)
**Issue date:** September 2023
**Holder's name:** Malgorzata Dudek-Witkowska
**Holder's country:** Poland
**Examination center:** CompSecur Sp. z o.o., Wroclaw, Poland
**Earned ECTS credits:** 22

**EITCA/CG Programme (version/revision: v1r2) component EITC Certificates:** **Result:**

## EITC/CG/APS Raster graphics processing software (Adobe Photoshop) — 100%
EITC Certificate number: EITC/CG/APS/JQF23004746

Certificate Programme description: Introduction: downloading and installation of application, basic concepts (bitmap graphics, resolution standards, compression); User interface: workspace, commands, palettes, preferences, keyboard shortcuts, navigation through a document, views; Image parameters: rotation, cropping, histogram correction, noise blurring, sharpness improvement, color correction, examples (red eye effect removal, adjusting hue and saturation irises, object geometry corrections); Photomontage: design analysis, editing tools: pen, layers (working with multiple layers, editing, locking, transformations, layer properties, alpha channel), selections (selections stored in files), manual image adjustments (tools, brushes, light and shadow adjustment); Portrait retouching: eyes (hue/saturation, smudge tool), mouth, teeth (sharpening, unsharp mask), skin (eyedropper tool, clone stamp tool, blur tool), hair (chiaroscuro); Silhouette retouch: appearance modification, needed tools (liquify filter, density, liquify panel, pucker tool, bloat tool, reconstruct tool); Website graphics elements: basic aspects (web safe palette, dimensions, fonts, photos), vignette, vector objects, layer style (elements styling, color, gradient, shadow, glow), text objects, small graphics elements, styles, actions (batch sequence), images export (image size, cutting); Print publishing: working on a print publication (image styling, print area, scaling, typography in print publication), offset printing (reproduction of images)
Certificate Programme version/revision: EITC/CG/APSv1r2

## EITC/CG/AII Vector graphics processing software (Adobe Illustrator) — 78%
EITC Certificate number: EITC/CG/AII/JQF23004746

Certificate Programme description: Vector graphics: vector graphics processing software (introduction, main tasks); Adobe Illustrator GUI: effective usage of Adobe Illustrator application, available tools, palettes, keyboard shortcuts, preferences, navigation; Creation of objects in Adobe Illustrator: gallery of shapes, description of available tools; Shapes creation: combining shapes, drawing freehand shapes (pencil tool, smooth tool, blob brush tool); Transforming and editing of objects: free transform (moving, rotating, reflecting, scaling, shearing), aligning objects (manual, automatic), grouping, masking; BÃ©zier curves for creating and editing shapes: creating arc instead of segment, converting anchor points, direct selection tool, averaging the position of anchor points; Working with colours: fill, collection of samples, gradient, opacity, contour; Text in Adobe Illustrator: type tool, fonts, artistic type, paragraph styles (multiple columns), shape of text object, converting text to outlines; Object properties: transparency, opacity, blending modes, appearance, effect menu (stylize, blur, feather); Layers: working with layers, layers panel, managing layers; Bitmap graphics in Adobe Illustrator: importing bitmaps, bitmap operations (filtering, vectorization - live trace feature, obtaining vector image); Graphic design printing: offset printing, color preparation for printing, colour space, resolution of raster effects
Certificate Programme version/revision: EITC/CG/AIIv1r2

## EITC/CG/AIDF Desktop publishing software (Adobe InDesign) — 80%
EITC Certificate number: EITC/CG/AIDF/JQF23004746

Certificate Programme description: Adobe InDesign as an application for desktop publishing and prepress (desktop publishing): layout (arrangement of publication elements), user interface (tools, palettes, functionality of menu items), navigation, keyboard shortcuts; Document creation: document settings, inserting text objects (filling in text columns, controlling text properties by using styles, paragraph style, creation of diacritical marks, converting text to outlines, working with text, artistic text and paragraph text, text flow), inserting images; Vector objects in InDesign: Adobe Illustrator objects embedding, graphical objects (background, gradient), objects transformations (transform tools), BÃ©zier curves (introduction, explanation and usage of BÃ©zier curves), masking; Master pages and items: introduction and usage; Layers: the concept of layers, working with layers; Publication management: pragmatics of working with publications, archiving and document preparation to work on another computer, document preparation for publication and printing, saving to PDF format
Certificate Programme version/revision: EITC/CG/AIDFv1r2

## EITC/CG/AF Interactive animation and graphics design software (Adobe Flash) — 96%
EITC Certificate number: EITC/CG/AF/JQF23004746

Certificate Programme description: Introduction: Adobe Flash format specification, working with Adobe Flash (animation, sound, video), problems with embedding Flash files on websites; Adobe Flash interface elements: workspace, tool groups (selection tools, transformation tools, drawing and painting tools, tools for creating basic shapes, tools for editing object properties, navigation tools), main menu, options for files in native Flash formats, functionality of available menus; Creation of objects in Adobe Flash: design tools (pen), drawing tools (pencil), shape modifications, text in Adobe Flash (static text, dynamic text, input text), object properties (filling, gradient); Bitmap: bitmap vectorisation; Animation: frames and stop-motion, motion animation (animation with multiple keyframes), animation properties, shape animations, working with symbols and instances (symbol editting); ActionScript: workspace, variables (variable types), arrays, operators, functions (function parameters), conditional statements, loops, properties of program elements, events; ActionScript practical use - simple flash game with Adobe Flash: scenario (description of the behaviour of each component), graphical elements preparation (elements design), exemplary game in ActionScript (analysis of code fragments and their applications, description of used functions)
Certificate Programme version/revision: EITC/CG/AFv1r2

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## EITC/CG/VICG Visual identification in computer graphics

83%

EITC Certificate number: EITC/CG/VICG/JQF23004746

Certificate Programme description: Computer Graphics: computer graphics in the context of visual communication, systems approach as an essential element of modern visual communication, computer graphics division by type of activity, computer graphics functional division, 2D graphics division according to image definition method (vector graphics, raster graphics); Visual identity: functions (image, identity confirmation), designing visual identity, creating visual identity system (steps and areas of system creation, brand book template), designing visual identity in practice (transformations, typography - modifications, graphical element, colour); Typography: designing fonts, font typefaces, typography rules, elements modifications, importance of font typefaces and their visual properties, basics of working with text blocks; Layout: composition (basic composition aspects, varied compositions), block layout, modular grid, typography design in layout, details in layout; Graphics in commerce - visual advertising: advertisement creation, technological considerations (team, technical processing, software), advertising media
Certificate Programme version/revision: EITC/CG/VICGv1r2

## EITC/CG/CAG Conceptual aspects of graphics

80%

EITC Certificate number: EITC/CG/CAG/JQF23004746

Certificate Programme description: General art related concepts: art and artistic creation in human life, the basic functions of art, visual perception (influence of suggestion, space perception); The concept of form: form as the shape and layout, various forms of creative expression (sculpture, installation, ceramics, applied arts and industrial design, performance art, multimedia art); Composition in visual art: concept of composition, planar composition, composition types, rhythm in the composition, golden ratio, colour composition (colour in composition creation); Perspective in visual art: the concept of perspective, perspective types, shadows perspective; Colour: basic information about the colours (colours mixing, primary colours, black and white, interaction of colours), colour and optics, harmonising colours, primary colours, pigments and their features, colour and light in computer graphics (transition between RGB mode and CMYK mode, Lab colour space); Typography: general information, basic issues of typography (font, typeface, construction of letter, lines of type, typographic measurement systems), typography in electronic media (functional and aesthetic elements in creating a web page, navigation structure, page layout); Logo and visual identity: logo as a brand mark, logo as a part of visual identity, brand book, trends in the design of logos for corporate identity; Artistic techniques: painting techniques (the technique of oil painting, acrylic technique, watercolour technique, tempera technique), graphic techniques (woodcut, linocut, engraving, screen printing); Characteristics of selected epochs in art: prehistoric art, ancient art (ancient Egyptian Art, ancient Greek art, ancient Roman art), Middle Ages art (Romanesque, Gothic), modern art (Renaissance, Baroque, Rococo, modernism), conceptual art, contemporary art
Certificate Programme version/revision: EITC/CG/CAGv1r2

## EITC/CG/AD Web pages design fundamentals (Adobe Dreamweaver)

85%

EITC Certificate number: EITC/CG/AD/JQF23004746

Certificate Programme description: Introduction: history of web pages, HTML language development, the rise of CMS systems, web standards, tools for creation and editing of web page layout and appearance; Preparatory stage: identification of web page type (home page, information portal, vortal, Web 2.0, transactional service, product mini-site), service architecture (proprietary service, CMS-based service, website structure, schema definition); Creation of layout: the concept of layout, visual identity in web layout (header and logo background, corporate colours in identity, corporate typography, graphics), essential layout elements (vignette as a header, main menu, main creation, text blocks); HTML language: HTML basics, page layout, HTML document definition, content formatting, hyperlinks, images, lists (bulleted lists, definition lists), tables, forms (form tags), general tag attributes, determining document type, meta information, code validation; Cascading Style Sheets CSS: style sheets syntax, adding styles to document, cascading property of style sheets, definitions and properties of selectors, ID and CLASS attributes, text and background formatting, tables and lists formatting, box model (margins, borders), units used in CSS; Positioning and display controlling of elements: fixed position, relative position, absolute position; floating elements, text blocks positioning, changing of hyperlink state, changing of hyperlink graphics; Adobe Dreamweaver interface: toolbar, available panels - description and their functionality, working with HTML documents; Web page creation in the Adobe Dreamweaver environment: creating a new project, project template files, adding web page elements (changing the parameters of individual elements, main menu, designing the footer), blocks grouping with container, page preview in the browser; Web design best practices: designing user-friendly pages, correctness of the HTML and CSS syntax, building columns with block elements , compression of images, usage of web-safe colours, respecting copyrights
Certificate Programme version/revision: EITC/CG/ADv1r2

## EITC/CG/AI2 Design and development of visual identity (Adobe Illustrator)

78%

EITC Certificate number: EITC/CG/AI2/JQF23004746

Certificate Programme description: Photorealism as a main example of the broad capabilities of Adobe Illustrator: photorealistic techniques (choice of colours, description of features enriching and deepening the project colours), gel-style design (variants of patterns, variants of shapes, colour change, complex shapes), mesh tool (visualization with gradient mesh), design tools; Elements of 3D construction: creating 3D shapes using revolve, shading, graphics, rotations; Perspective Grid: convergent perspective representation; Comic illustration: differences between simple and complex illustrations; Vector graphics basing on photographs; Space in vector illustration: two-point perspective, composition mapping on 3D shapes; Graphic styles: style elements, style creation, style libraries (3D effects, artistic effects, neon effects, illumination effects); Symbols: creating and editing symbols, symbol library, modification of symbol set; Libraries and graphical tools: vector packages, buttons and Internet bars, 3D symbols, artistic textures, graphic elements; Working with brushes in Adobe Illustrator: hand-painted plane, editing brushes with bristles; Methods for rapid modelling in Adobe Illustrator: object dividing command
Certificate Programme version/revision: EITC/CG/AI2v1r2

## EITC/CG/ACSU 3D graphics design and visualisation software (AutoCAD and SketchUp)

63%

EITC Certificate number: EITC/CG/ACSU/JQF23004746

Certificate Programme description: AutoCAD: Introduction to AutoCAD; User interface: workspace and navigation, keyboard shortcuts and commands, working with layers (layer status); Basic objects: oval objects, angular objects, object properties; Modification of objects: description of most important tools; Areas hatching; Objects dimensioning; Work supporting features: blocks, regions, multiline, inquiries; Designing: apartment interior design, garden design, printing; Google SketchUp: Introduction to SketchUp; User interface: title bar, main menu, drawing axes, toolbars, workspace and navigation (camera tools), types of interfaces: point, linear, planar; Working with layers; Tools and their properties: main tools, drawing tools, modification tools, construction tools; Design, construction and presentation of larger objects; Working with Google Earth; Realistic rendering and 2D effects: shadows, fog, scenes and animation; Designing: image import and export; house 3D design (interior designing, building 3D models from photographs), garden 3D design (terrain modelling)
Certificate Programme version/revision: EITC/CG/ACSUv1r2

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## EITC/CG/TFCG Theoretical foundations of computer graphics

71%

EITC Certificate number: EITC/CG/TFCG/JQF23004746

Certificate Programme description: Introduction: computer graphics (origins and history of computer graphics, applications, hardware), raster and vector graphics, interaction human-computer, graphics standards; Light and colour: basic concepts and definitions (colourimetry, perception), eye construction and properties of vision, theory of colour vision, colour models (CIE XYZ, CIE Lab, RGB, CMY and CMYK, HLS and HSV), colour reproduction, compatibility problems (raster distortion); Raster operations - basics: segment and arc drawing, polygon filling (seed fill, parity test), clipping algorithms, elements of computational geometry (alpha function, orientation on a plane, point-in-polygon problem); Geometric transformations in computer graphics: 2D transformations, matrix representation of transformations, normalized homogeneous coordinates, basic types of transformations (symmetric reflection, skew, scale, translate, rotate), 3D transformations, composition of transformations, problem of numerical accuracy, quaternions; 2D representation of a 3D space: projection on a plane (types of projection, projection properties, coordinate system), parallel and perspective projection as matrix operations, projection and view (viewing frustum, projection parameters, perspective transformation, projection and photography, virtual camera); Objects modelling for computer graphics: modelling of curves and surfaces (interpolation, parameterization, BA©zier curves, B-splines curves), solid modelling, fractal modelling, modelling using grammars, volumetric modelling; Hidden surface removal: determining surface visibility, classes and examples of algorithms; Lighting modelling: light scattering - interaction of light with matter, basic photometric quantities, light reflection models, shading; Global illumination; Ray tracing algorithms; Increasing the realism of processed images and objects: textures and their types (texture sampling and filtering problems), shape deformation, animation elements
Certificate Programme version/revision: EITC/CG/TFCGv1r2

## EITC/CG/ADPD Artistic digital portrait drawing

73%

EITC Certificate number: EITC/CG/ADPD/JQF23004746

Certificate Programme description: Introduction to digital artistic drawing of portraits; Skin tones: choosing skin colours, creating palettes, using the colour wheel in graphic software to help choose the right tones, using non-standard colours for skin; Eyes: eye shapes and proportions, anatomy, perspective, application of shadows, walk-through of the whole process on the eye painting; Noses: nose shapes and proportions, anatomy, perspective, application of shadows, walk-through of the whole process on the nose painting; Lips: lips shapes and proportions, anatomy, perspective, application of shadows, walk-through of the whole process on the lips painting; Ears: ears shapes and proportions, anatomy, perspective, application of shadows, walk-through of the whole process on the ear painting; Hair: basic hair shaping, work from basic shapes to details, matching the hairstyle shape to the face; How to work with references (portrait edition): the use of reference photos, techniques for recreating characters from photos, useful vs. useless parts of the reference photos, using one vs. many photos, the use of 3D software; Sculpting approach to painting: painting without the use of a sketch and guide lines, "building/sculpting" the painting and treating it as clay that can be distorted, cut, rebuilt, reshaped at any time; Smart rendering: indicating when it is worth to focus on details and when it is unnecessary, deliberately leaving "unfinished" objects/parts of a painting to achieve specific results; Light and shadow as an aftereffect: adding "dramatic" light effects at the end of the painting process (when it's finished/almost finished), "saving" an average work with interesting character lighting, overview of useful layers
Certificate Programme version/revision: EITC/CG/ADPDv1r1

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