# CERTIFICATE SUPPLEMENT
# EITCA/BI/MDN19004446

**Certificate ID:** EITCA/BI/MDN19004446
**Certificate type:** The European Information Technologies Certification Academy Programme
**Academy name:** EITCA Business Information Technologies Programme (EITCA/BI)
**Issue date:** June 2019
**Holder's name:** Patryk Kowalski
**Holder's country:** Poland
**Examination center:** CompSecur Sp. z o.o., Wroclaw, Poland
**Earned ECTS credits:** 24

## EITCA/BI Programme (version/revision: v2r1) component EITC Certificates:

**Result:**

### EITC/BI/ITIM Information technologies in management

79%

EITC Certificate number: EITC/BI/ITIM/MDN/19004446

Certificate Programme description: Introduction to management: what is management, basic managerial functions, main trends in human resources management, organization, teamwork, team creation and types of teams, group standards and group goals, roles of group members and their skills, assertiveness, conflict, communication and its role, effective communication, types of communication in organizations, active listening and communication of information; Project management and human resources management: basic motivation process, human Relations and a model of human resources, theories of needs, leadership (situational approach to leadership, transformational leadership), human resource management, recruitment (internal and external recruitment, trait theories, job interview), training (training effectiveness); Introduction to Project Management: project stages, project management in practice, project schedules; Computerization: desirability of computerization in institutions (objectives of an institution, areas of business activity, benefits of computerization), institution requirements audit, problem of information security, information and communication infrastructure, business activities supporting software, enterprise management software, comprehensive ERP systems, other IT-based solutions, introduction to CRM systems, CRM systems functions; Microsoft Project: application installation, getting started with Microsoft Project, ribbon, project tasks workspace, project charts workspace; Management of telework and remote group collaboration: flexible forms of employment in the current labor market situation, revision of telework definitions, telework and its organizational forms (telework types, telework and people with disabilities), society changes affecting technological conditions of telework ("Johoka Shakai" information society, transformation process in institutions, outline of the ICT usage as telework supporting instruments in modern enterprises, hardware for telework in the context of legal regulations and costs reimbursements), legal basis (rights and obligations of teleworker/telecommuter, rights and obligations of employer), types of contracts (civil law contracts, employment contract), telework employment contract example, IT software for telework (internal communication systems, internal publishing and information systems, internal group collaboration systems, Google Apps as a tool for communication and collaboration, Microsoft Office Sharepoint for communication and human resources management), IT hardware for telework (portable computers, mobile devices, wireless Internet access, VoIP alternative telecommunications systems, GPS location systems); Work management within Google Apps: GMail electronic mail (account creation, labels, filters, searching), Google messaging application (contact list, invitations, off-record mode, archive, voice and video conferencing), Google Docs word-processing editor (managing and organizing text documents, creating, sharing and editing of shared documents in real time (RTC), raster files importing and integrated optical character recognition OCR, text documents editing functions, managing history of changes), Google Docs spreadsheet editor (managing and organizing spreadsheets, creating, sharing and editing of shared spreadsheet in real time (RTC), spreadsheets editing functions, managing history of changes), Google Docs presentation editor (creating, sharing and editing of shared presentations in real time (RTC), embedding images and videos, sharing and publishing), Google Calendar (creating events, invitations and notifications, manage multiple calendars, sharing calendar, calendar settings)
Certificate Programme version/revision: EITC/BI/ITIMv1r2

### EITC/BI/BAS Business and administration software

88%

EITC Certificate number: EITC/BI/BAS/MDN/19004446

Certificate Programme description: Introduction to knowledge associated with computerization of business / administration: needs and potential for computerization in institutions (objectives of an institution, business areas, benefits of computerization), business requirements analysis, problem of information security; information and communication technologies solutions overview: information and communication infrastructure, software support for main business processes, software for enterprise management, complex ERP systems, other solutions based on information technologies (real time collaboration software, internet based communication solutions, mobile solutions, systems of authorization and access control, monitoring systems), customer relationship management - CRM systems: introduction and overview of CRM systems functionality, exemplary CRM systems (installation, configuration and system administration, customers, sales, graphs and reports, calendar and activities organization, auxiliary tools and interface organization), Internet telephony: VoIP technology, benefits and problems related to usage of Internet telephony, VoIP devices, Internet telephony market, VoIP in practice - using VoIP software and hardware
Certificate Programme version/revision: EITC/BI/BASv1r2

### EITC/BI/GADW Internet advertisement and marketing fundamentals (Google AdWords)

63%

EITC Certificate number: EITC/BI/GADW/MDN/19004446

Certificate Programme description: Internet marketing: Internet usage statistics, types of advertising, e-advertising formats, advantages and disadvantages of online advertising; Google; Google AdWords system: video ads, ads displaying and scheduling; The first campaign in the Google AdWords: account types, account activation, campaigns, keyword management, fundamental principles for text ad creation, keyword matching; Campaign targeting in Google AdWords system: contextual targeting, targeting on the search results pages, placement targeting, language and location targeting; targeting on users, custom targeting; Google AdWords ads effectiveness testing: keyword relevance, CTR, reporting, conversions; Costs and payments in Google AdWords system: ads emission methods, methods of payment, rates matching, billing process, billing cycle, charges; Optimize Google AdWords account: ads displaying, positioning preferences, ads scheduling; Google AdWords Tools: keyword suggestions, sites and categories exclusions, Campaign Optimizer, visits forecast, ads diagnostic, AdWords Editor application; Google Analytics; Client accounts management in Google AdWords system
Certificate Programme version/revision: EITC/BI/GADWv1r3

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## EITC/SE/CPF Computer programming fundamentals

67%

EITC Certificate number: EITC/SE/CPF/MDN/19004446

Certificate Programme description: Introduction to object-oriented and event-driven programming: variables and data types, overview of programming paradigms (imperative, procedural, structural, object-oriented and event-driven programming), idea of object-oriented programming (classes and objects, inheritance and polymorphism); Programming in C# on Microsoft .NET platform: .NET Framework, Visual Studio .NET programming environment, syntax and semantics of C# language (program structure, variables and data types, operations and operators, functions, methods, imperative data-flow structures), console applications, object aspect of C# language, object model of .NET environment, classes and objects in C#, creation of window-based applications (Windows Forms object model, forms, controls and attributes, event handling implementation); code re-usage and open-source software: object-oriented programming and code re-usage, free software idea, social networks programming
Certificate Programme version/revision: EITC/SE/CPFv1r2

## EITC/BI/SDBAMS Spreadsheets and databases in business applications (MSO Excel, MS Access)

100%

EITC Certificate number: EITC/BI/SDBAMS/MDN/19004446

Certificate Programme description: Creation of complex spreadsheets: usage of financial and mathematical analysis, reporting, subtotals, conditional commands, multi-level data grouping, pivot tables, VB language for building complex functions/macros in Excel: introduction to VB language (syntax, variables/constants, data segregation, queries, concurrent tasks, synchronization of events), implementation of simple VB scripts, modification and analysis of procedures, advanced use of Microsoft Access application: database building, reporting, queries, normal form of databases (first, second and third normal form), graphical representation of data: advanced reports, different types of trends, chart types, data migration, graphical analysis of data, integration of Microsoft Office solutions: integration with Microsoft Access and ODBC external data sources, data migration between Microsoft Office applications, authentication and access authorization to distributed systems with multiple Microsoft Office solutions (declarative and imperative authentication, declarative and imperative authorization), cooperation of .NET applications with Microsoft Office applications via COM, data intermediate storage files (e.g. CSV, XMS); optimization tasks: optimization models, statistical and variant analysis, solver - complex problem solving tool, optimization algorithms, discrete and continuous optimization
Certificate Programme version/revision: EITC/BI/SDBAMSv1r2

## EITC/DB/DDEF Databases and data engineering fundamentals

92%

EITC Certificate number: EITC/DB/DDEF/MDN/19004446

Certificate Programme description: Introduction: database requirements, characteristics of databases, database technology, data model, database systems (RDBMS), interaction and communication with the database and implementation technology of database applications (communications architecture); Relational databases: data structure, integrity constraints, data operations, data representation (rules of entities transformation into relational model); Introduction to SQL query language: SQL as a declarative language, database queries (projection, expression, aliases, duplicates elimination, sorting results of a query, selection); preparation of a laboratory environment; SQL functions: aggregate functions, operators, set operators (join, outer join), subqueries (subqueries types), insertion of tuples into relation, modification and deletion of tuples from relation; Microsoft Office Access: database creation (defining relationships between tables, field formatting), queries, reports wizard, forms, external data (data export, data import); Artificial Intelligence: decision support systems (expert systems, data mining), semantic networks; Normalization: normal forms (first normal form, second normal form, third normal form)
Certificate Programme version/revision: EITC/DB/DDEFv1r2

## EITC/IS/EEIS Electronic economy information security

88%

EITC Certificate number: EITC/IS/EEIS/MDN/19004446

Certificate Programme description: Information technologies threats in electronic economy: categorization of threats (intentional threats, unintentional threats), security policy: formalization of information flows within organization, Information technologies security audit: organizational interview, information flow security analysis, auditing methodology and tools, STRIDE threat model; Dealing with security threats: malicious software (malware) and computer viruses, secure data storage, network threat protection (firewalls, NAT and PAT, Proxy Servers, IDS and IPS systems, personal firewalls); Cryptographic data protection: use of cryptography to protect data, certification and public key infrastructure (PKI), digital signature, Secure Socket Layers (SSL) protocol, virtual private networks (VPN), security of applications and network services
Certificate Programme version/revision: EITC/IS/EEISv1r1

## EITC/INT/IT1 Internet technologies 1

67%

EITC Certificate number: EITC/INT/IT1/MDN/19004446

Certificate Programme description: Introduction to WWW architecture and applications: WWW architecture (HTTP client and server, HTTP protocol, URL addressing), WWW documents and applications (examples of WWW applications, advantages and drawbacks of WWW applications); HTML language and structure, characters' formatting in HTML, hypertext links in HTML, graphics in HTML, tables in HTML, HTML editors, CSS styles - CSS language: examples of CSS and HTML integration, CSS rules format, CSS properties, CSS elements' positioning, rules inheritance in CSS, CSS cascades; XML and XHTML languages: XML language and applications, structure and correctness of XML documents, XML namespaces, XHMTL language, XML document formatting; XSL language: XSLT transformations, XSL-FO formatting objects; HTML forms, sending a HTML form, JavaScript language (variables, instructions, operators and syntax, functions, objects, arrays, strings), JavaScript in HTML documents; DOM (Document Object Model), Events handling in JavaScript, Window object in JavaScript, Documents in JavaScript and other significant objects, Regular expressions in JavaScript; Java applets: examples. Java applets in HTML documents, user interface in a Java applet; HTTP protocol: HTTP messages (request - GET order, response), MIME file formats, other HTTP orders, authentication in HTTP protocol, Base64 encoding, cookies, document buffering (cache mechanism), Persistent Connections mechanism, HTTP Proxy servers, secure HTTP (HTTPS); CGI Scripts: Presentation logic, CGI programs and their types, HTTP request parameters, Java Servlets (presentation logic): Java servlet lifecycle, HttpServletRequest interface, HTTP request parameters, HttpServletResponse interface, Return codes, Handling variable cookies (send and receive), HTTPSession
Certificate Programme version/revision: EITC/INT/IT1v1r2

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## EITC/INT/IT2 Internet technologies 2

88%

EITC Certificate number: EITC/INT/IT2/MDN/19004446

Certificate Programme description: Server Side Includes (SSI), Active Server Pages (ASP), ASP.NET: dynamic web pages creation technology, Microsoft.NET platform, ASP.NET controls, ASP.NET session variables, code separation, ASP.NET and Visual Studio; PHP Hypertext Preprocessor: technology and PHP language, variables in PHP; JavaServer Pages (JSP) and JavaServer Pages Expression Language (JSP EL), server pages for Java servlets; Creating business logic, tag library: JavaBean components, JSP tag libraries, standard JSTL tag library, tag files; Database access mechanisms in web technologies: JDBC databases in Java EE applications, O/RM technologies and Java Persistence standard, ADO.NET databases in ASP.NET applications, databases in PHP applications; Web application infrastructure and ASP.NET Web Forms architecture: problems in Web applications, interface in Web Forms, Auto Post Back mechanism, interface state in ASP.NET, data validation in ASP.NET, security and navigation in ASP.NET; MVC architecture and its implementation for Java EE - Apache Struts: MVC architecture (Model-View-Controller), MVC in Java EE applications - JSP Model 2; Infrastructure for Java EE application - JSF (Java Server Faces): JSF technology, data presentation in tables (h:dataTable component), JSF in IDE; HTTP servers - Apache Server: Apache HTTP server architecture, configuration of Apache, Apache log, block directives in Apache, access protection in Apache server; Web application security: Web application threats (source code theft, attack on HTML hidden fields, attack on Cookies, "Path Traversal" attack, "SQL Injection" attack, session hijacking, "Denial of Service" attack , data validation in Struts), defensive mechanisms (validation of parameters passed by user, public website limitations and restrictions)
Certificate Programme version/revision: EITC/INT/IT2v1r2

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

88%

EITC Certificate number: EITC/CG/AD/MDN/19004446

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/VICG Visual identification in computer graphics

86%

EITC Certificate number: EITC/CG/VICG/MDN/19004446

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/TT/MSF Mobile systems fundamentals

63%

EITC Certificate number: EITC/TT/MSF/MDN/19004446

Certificate Programme description: Introduction to mobile systems: main characteristics, features and benefits of mobile systems, development of mobile systems applications, problems and challenges of mobile systems, mobile user, mobile devices, mobile communications, mobile systems architecture, an overview of chosen applications of mobile systems; Positioning and navigation of mobile users: theory of geographic positioning, measuring equipment (determination of course, speed and distance, time measuring), inertial navigation, positioning in GSM networks, counted and observed GSM positions, integrated systems, navigation in buildings, uncertainty of GSM location, satellite navigation systems (GPS, GLONASS); Cellular systems: the idea of mobile telephony (concept of "frequency reuse", disadvantages of architecture of cellular systems, radio coverage areas, deployment of base stations, frequency channels beam), overview of cellular architecture systems (GSM / UMTS, Mobitex, Wi-Fi , Bluetooth, Iridium), problem of cellular network capacity (increasing channel capacity, reducing cell size), roaming, handover, GSM system, structure and components of GSM system (functional blocks, IDs), base stations and mobile stations, terminal states, conducting a conversation - speech signal transmission, messaging (SMS, EMS, MMS), standards of data transmission (HSCSD, GPRS, EDGE, UMTS), user authentication; Wireless communication systems: satellite communications systems - geostationary systems, non-geostationary systems, paging systems, dispatch systems, wireless telephony, devices with infrared system, military mobile systems; Representations of spatial data and SIS: SIS - spatial information systems (tasks and applications, basic components and modules, spatial analysis), implementation and verification of spatial data, spatial data processing, raster and vector model of spatial data, topological vector model, representation of spatial data; Mobile processing - problems (recursive space decomposition, migration, spatial data scattering by partitioning, uncertain positions in urban network, uncertain positions at sea; Mobile database systems: position update of mobile user (INFORM strategy, SEARCH strategy), queries and services dependent on position, mobile transactions, data replication and migration, geographically targeted messages, geographic routing; Wireless LAN networks: characteristics and operation of WLAN, network adapters and access points, types of radio antennas, access point configuration, ADHOC networks, creation of wireless links, standards (802.11b, WiMAX), wardriving, WAP and WML language: WAP (protocol versions, creating WAP sites), language, WML (document structure, presentation of data, events and actions, forms, links to PHP, phone calls)
Certificate Programme version/revision: EITC/TT/MSFv1r1

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