CERTIFICATE SUPPLEMENT
EITCA/BI/MDL10372430

Certificate ID: EITCA/BI/MDL10372430
Certificate type: The European Information Technologies Certification Academy Programme
Academy name: EITCA Business Information Technologies Programme (EITCA/BI)
Issue date: June 2010
Holder's name: Mateusz Pytel
Holder's country: Poland
Examination center: CompSecur Sp. z o.o., Wroclaw, Poland
Earned ECTS credits: 24

EITCA/BI Programme (version/revision: v1r1) component EITC Certificates: **Result:**

EITC/OS/MSSAM Software administration and management (Microsoft) 91%
EITC Certificate number: EITC/OS/MSSAM/MDL/10372430

Certificate Programme description: Theoretical foundations of project and resource management: feasibility study, preparation of WBS (Work Breakdown Structure), introduction to work organization (schedule, Gantt chart, determining the budget, allocation of tasks and resources, risks), Microsoft Project management software: usage of Microsoft Project suite (Gantt chart, milestones, task path and critical task path, automation of financial analysis, recurring tasks, control over schedule execution), reports generation, prevention and response to emergencies: an introduction to operating system recovery mechanisms (Rescue & Recovery, preparation of emergency boot sector, backup procedures, restoring the operating system), Recovery Console use (most common accident scenarios, physical disk error, a logical error in the registry file, advanced usage of the registry backup, partitioning), understanding system error messages and searching for information on recovery procedures on the Internet, administration of Microsoft Windows systems installation and upgrading (installation and upgrade issues, installation of security patches and service packs), user accounts and authentication management (user groups and granted rights, cooperation with strong authentication systems), system configuration and hardware devices, network domain configuration, the configuration of Internet Information Services IIS (web server and ftp server configuration), disk management (NTFS file system, disk space allocation to users, security management, sharing), Active Directory, operating system security, MMC system management console
Certificate Programme version/revision: EITC/OS/MSSAMv1r1

EITC/BI/SDBAMS Spreadsheets and databases in business applications (MSO Excel, MS Access) 98%
EITC Certificate number: EITC/BI/SDBAMS/MDL/10372430

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/BI/GADW Internet advertisement and marketing fundamentals (Google AdWords) 85%
EITC Certificate number: EITC/BI/GADW/MDL/10372430

Certificate Programme description: Introduction to online advertising: Internet marketing (definitions, Internet usage statistics, Internet marketing tools and paradigms), basic e-advertising formats, advantages and disadvantages of online advertising; Google AdWords system: Advertising with Google AdWords (Google Inc. Advertising Principles and requirements for ads approval, ads displaying and scheduling, features of advertising with Google AdWords system); AdWords Account: account types, campaign creation (campaign settings), keyword management, fundamental principles for text ad creation; Main elements of Google Network: ad targeting in Google AdWords (targeting types, conditions for targeting specific users), keyword matching options (possible match types), AdWords payment types; AdWords ads effectiveness testing: impact of quality on search results, methods of monitoring ads effectiveness, report feature (types of reports), conversion role; Payments in Google AdWords system: Billing process (billing cycle, European Union Value-Added Tax - EU VAT); Landing pages and account optimizing: keywords, placements, ads scheduling, ads positioning (setting position preferences), advanced optimization; Google AdWords Tools: usage of Google AdWords tools, AdWords Editor application characteristic (View and Sort Information functionalities); Google Analytics - website statistics and visits tracking system : account creation, main advantages, differences between Google Analytics and conversion tracking, methods of efficient usage of statistics, main indicators in Google Analytics; Google AdWords features: My Client Center (client accounts management), AdWords API (advantages and benefits, API features)
Certificate Programme version/revision: EITC/BI/GADWv1r1

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EITC/BI/BAS Business and administration software

98%

EITC Certificate number: EITC/BI/BAS/MDL/10372430

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/INT/IT1 Internet technologies 1

91%

EITC Certificate number: EITC/INT/IT1/MDL/10372430

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

EITC/SE/CPF Computer programming fundamentals

85%

EITC Certificate number: EITC/SE/CPF/MDL/10372430

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/DB/DDMS Databases and database management systems

85%

EITC Certificate number: EITC/DB/DDMS/MDL/10372430

Certificate Programme description: Introduction to databases: basic concepts, characteristics and technology of databases, requirements for databases, database management systems, data model and database architecture, database system users, interaction with the database (SQL language, application implementing technologies), client-server architecture, classification and review of database systems, relational databases: relational data model, data structures in the relational model, characteristics of relations, integrity constraints (primary key, foreign key), basic operations of relational algebra (selection and projection operations, creating complex operations, commands in SQL language, operations on sets), data modelling: types of models, information system design cycle, objects as fragments of reality, model of relationships - entities (modelling entities and relationships, attributes of entities, characteristics of relationships, types of associations, types of entities and relationships, modelling of complex elements - ternary relationships, hierarchy of entities); transformation of models: basic concepts, the transformation of entities relationship model to relational model (entity transformation rules, transformation rules of relationships, transformation of entities hierarchy); normalization: the idea of normalization - decomposition without loss of information, functional dependencies, normalization process - basic concepts, normal forms (first, second, third and fourth normal form, multi-valued dependencies, Boyce-Codd normal form)
Certificate Programme version/revision: EITC/DB/DDMSv1r1

EITC/TT/MSF Mobile systems fundamentals

85%

EITC Certificate number: EITC/TT/MSF/MDL/10372430

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,

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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

EITC/AI/AIF Artificial intelligence fundamentals

98%

EITC Certificate number: EITC/AI/AIF/MDL/10372430

Certificate Programme description: Introduction to artificial intelligence: natural intelligence vs. artificial intelligence, problems and tasks of artificial intelligence; Inference: inference tasks, syntax and semantics of predicate logic, PROLOG language as an example of inference system (PROLOG as a declarative language, syntax, lists, resolution and unification), inference on the basis of uncertain and incomplete knowledge (imperfect knowledge in inference and its processing methods, Bayesian inference, fuzzy logic and fuzzy inference); Strategies and methods for searching: backward and forward chaining, problem solving by space searching, evaluation function, heuristic function, search strategies based on functions, random search methods (computational complexity, random sampling algorithm, hill climbing algorithm, simulated annealing algorithm); Two-persons game (game model and game tree, choice of move, minimax algorithm, alpha-beta pruning); Inductive inference: conditional attribute properties, supervised learning with teacher, error function, Occam's razor principle, training and test sets; Classification: classification problem, decision tree, classification rules, classification of example elements, memory and its use; Linear and nonlinear regression: parametric model of regression, delta rule, linear and nonlinear models, approximation, neural networks (multilayer perceptron, network parameters) with reinforcement learning: reinforcement learning tasks, Markov decision processes, stochastic strategies, dynamic programming, Q-learning, use of reinforcement learning
Certificate Programme version/revision: EITC/AI/AIFv1r2

EITC/IS/EEIS Electronic economy information security

85%

EITC Certificate number: EITC/IS/EEIS/MDL/10372430

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/IT2 Internet technologies 2

71%

EITC Certificate number: EITC/INT/IT2/MDL/10372430

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/CGVF Computer graphics and visualization fundamentals

91%

EITC Certificate number: EITC/CG/CGVF/MDL/10372430

Certificate Programme description: Introduction to computer graphics (genesis and history of computer graphics, applications, hardware), raster and vector graphics, human-computer interaction, graphic standards; Light and colour: basic concepts and definitions (colourimetry, vision, perception), eye structure and properties of vision, theory of colour vision and perception, colour models (CIE XYZI, CIE Lab, RGB, CMK and CMYK, HLS and HSV), colour reproduction, compatibility problems - pitch distortion; Raster operations - basic: drawing a circle segment and arc, filling the area (by consistency, by parity), clipping algorithms, computational geometry elements (alpha function, points orientation on a plane, points in polygon problem), geometric transformations in computer graphics (2D transformations, matrix representation of transformations, normalized homogeneous coordinates, basic types of transformations (reflection symmetry, skewing, scaling, translation, rotation), transformations in 3D space, compositions of transformations, problem of numerical calculations accuracy, quaternions; 3D space representation in 2D space: projection onto a plane (projection types, projection properties, coordinate system in projection), parallel and perspective projection as matrix operations, projection and vision (cone of vision, projection parameters, perspective conversion, projection and photography, virtual camera)
Certificate Programme version/revision: EITC/CG/CGVFv1r1

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