

SYLLABUS

for Comprehensive State Exam

Degree: Computer science

Professional qualification: Master degree in “Informatics and
Computer Science”

Class: 2021-2022

E-Commerce

1. Impact of the Internet on business. Internet economy. E-business definition and major advantages. E-business categories.
2. Electronic commerce – definition, features and technological models. Electronic payment systems, used in e-commerce. Evaluation of electronic shops
3. E-commerce systems. Architecture of e-commerce systems. Technologies for creating online stores. Open-source software for creating online stores.
4. Introduction to e-marketing. The e-commerce website as a marketing tool. Website promotion and advertising. Web site Search Engine Optimization (SEO).

Literature:

Laudon, K. and Traver, C. (2017). *E-Commerce 2017*. Harlow, England: Pearson Education LTD.

Sulova, S. et. al. (2015). *Electronic Business 1st Part. Business Modeling. Analysis and Development of Business Information Systems*, Publishing house „Science and Economics” University of Economics – Varna, ISBN 978-954-21-0865-8.

.NET Web Development

1. The .NET platform – .NET Framework, .NET and .NET Core web applications, basic components of the .NET Framework, programming languages and development tools.
2. Web controls, events and interactions.
3. State management – application state, session state, server controls state.
4. .NET web applications security, authentication and authorization.
5. Working with databases – basic concepts and supported technologies, controls and functions for database access.

Literature:

Penberthy, W. (2015) *Beginning ASP.NET for Visual Studio 2015: Web Forms and MVC*. Wrox, 2015.

Chowdhury, K. (2019). *Mastering Visual Studio 2019: Become proficient in .NET Framework and .NET Core by using advanced coding techniques in Visual Studio*. Packt Publishing.

Online lectures (<http://users.ue-varna.bg/vsulov> and <http://e-learn.ue-varna.bg>).

E-Finance

1. Electronic banking. The essence of electronic banking. Types of electronic banking and chronology in its offering
2. Internet banking. Technology and organization of Internet banking. Types of systems for Internet banking. Advantages of Internet banking
3. Security and protection of Internet banking. Potential threats for Internet banking users. Methods for protection and authentication of users
4. Online insurance. Nature and purpose of online insurance. Peculiarities of insurance business that complicate online insurance. E-business models for Internet distribution of insurance products.
5. Electronic payment systems. Essence of electronic payment systems. Types of electronic payment systems and related payment instruments. Mobile payments

Literature:

- Joshi, V. (2020). Digital Finance, Bits and Bytes: The Road Ahead. Springer Nature.*
- Laudon, K., Traver, C. (2017). E-Commerce 2017: Business, Technology, Society. 13th Ed., Pearson.*
- Wewege, L., Thomsett, M. (2019). The Digital Banking Revolution. How Fintech Companies Are Transforming the Retail Banking Industry Through Disruptive Financial Innovation. Boston/Berlin: De Gruyter.*

Server-Side Web Programming

1. The client-server concept. RFC standards for communication protocols. HyperText Transfer Protocol.
2. Web server. Configuration. CGI scripts.
3. Applications with web interface. PHP. Working with templates in PHP.
4. Web applications working with DBMS. Administration tasks.
5. AJAX technology. Web application security.

Literature:

- Duckett J. (2021). PHP & MySQL: Server-side Web Development. Wiley.*
- Tatroe, K., & MacIntyre, P. (2020). Programming PHP: Creating Dynamic Web Pages. O'Reilly Media.*
- Welling, L., & Thomson, L. (2016). PHP and MySQL Web Development (Developer's Library). Addison-Wesley Professional.*

Business Process Modeling

1. Business processes – elements, management lifecycle, classification
2. Basic concepts of business process modeling.
3. Business process modeling methods. Business Process Model and Notation (BPMN 2.0).
4. Building business process models.
5. Implementing business process models in Dynamics 365 Sales environment. Business process flows and workflows.

Literature:

Kale, V. (2019). Enterprise Process Management Systems: Engineering Process-Centric Enterprise Systems using BPMN 2.0, CRC Press.

Laguna, M., Marklund, J. (2019). Business Process Modeling, Simulation and Design. 3rd ed. CRC Press.

Thomas, A. BPMN 2.0: introduction to the standard for business process modelling, 2nd edition, Books on Demand GmbH, 2016, ISBN 9783837093315

Yapa, S. (2019). Customizing Dynamics 365. Implementing and Releasing Business Solutions. Apress.

Type of exam: e-test – 80 multiple choice questions covering all disciplines. Each question has one right answer. Each correctly answered question brings 1 or more points, because questions have different weights. Questions answered with a wrong answer do not decrease the total amount of points. The test is done within 3 hours.

22.03.2022

Head of the Department of Informatics:

(Prof. Julian Vasilev, PhD)