



**Academia de Studii Economice**  
**Departamentul de Informatică și Cibernetică Economică**

Calea Dorobanți, 15-17, Sector 1, București, 010552 (camera 2314)

Tel.: +40 21 319 19 00, ext. 319, 336, Fax: +40 21 311 20 66

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**Contest Topics for Professor**

**Position 24, 2017-2018**

**Disciplines: Economic Informatics, Geographic Information Systems,  
Multimedia**

**Economic Informatics**

1. IT&C technology and communication support in business, business management information systems, e-commerce and e-business, virtual corporations and e-activities in the digital economy.
2. Personal computers and mobile devices, architecture, technical and functional features for basic components, computer optimization and configuration selection
3. Computer networks - general structure of a network, principles and communication protocols, basic services offered by a network, LAN, LAN topologies, interconnection equipment LAN, MAN and WAN networks, wireless networks
4. Internet pages and web sites, Internet architecture and services, introduction to HTML, principles of Web pages development, content management systems for websites development
5. CRM - Customer relationship management - a customer-centric business approach, CRM modules, functions, main entities of the database, CRM interface
6. Collaborative working tools for electronic business communication: electronic communication tools, electronic conferencing tools and collaborative management tools (wiki systems, web publishing), electronic calendar, electronic forms, work flows - workflow and project management, spreadsheet electronic document management and communication activities group
7. Storing and managing information in databases, fundamental concepts, DBMS – Database Management Systems, design elements for relational database
8. Creating, updating and operation of databases, SQL elements
9. Corporate computer applications - ERP, ERP - a new vision to address the organization and operation of information systems and management, ERP functions, business processes and ERP modules, overview of the system SAP, Microsoft Dynamics, Oracle
10. Business Intelligence - BI Business Intelligence system components, corporate data warehouses - Data Warehouse for information substantiating decisions, Oracle technologies (Hyperion), Microsoft technologies, Business intelligence features in Microsoft Office, and other BI technologies
11. Operating principles and elements of Microsoft CRM package customization, Sales and MARKETING modules
12. Future development of IT&C technology, issues of IT cloud systems security, software-as-a-Service (SaaS), Web 2.0, Automatic Speech Recognition (ASR), Virtual Reality, holographic equipment's, biometric equipment's – Biometric Security, security of IT systems, security of e-business transactions, generalities on data encryption.



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13. Business communication using multimedia presentations - content, design, customizing presentation dynamics
14. Professional typing common business documents - offers, scientific text, business letters, merging documents, work with templates and styles, including automatically generated content and index, the principles of editing
15. Functions and procedures presentations for working with collaborative software packages
16. Personal computers and mobile devices, assessing technical characteristics and operating systems.
17. Solving economic problems using algorithms with linear or alternative structure in Excel
18. BI Applications in Excel, pivot tables, conditional formatting, scenarios
19. Designing, developing and updating a database, Electronic Forms

**Bibliografie:**

1. Pocatilu, Paul, Vespan Dragos (editori) et. al., *Birotica Profesionala*, ASE, București, 2009, România
2. Julie C. Meloni, *Învață singur PHP, MySQL, și Apache*, Corint, București, 2005, România
3. Lungu, Ion ; Botha, Iuliana ; Bodea, Constanța et. al., *Tratat de baze de date : vol I : Baze de date : organizare, proiectare și implementare*, Editura ASE, 2009
4. Shmueli, Galit ; Patel, Nitin R. ; Bruce, Peter C., *Data mining for business intelligence : concepts, techniques, and applications in Microsoft Office Excel with XLMiner*, Wiley, 2010
5. Tanenbaum, Andrew S., *Computer networks*, Prentice Hall, 2003
6. Nixob, Robert, *Learning PHP, MySQL, and JavaScript : a step-by-step guide to creating dynamic websites*, Wiley, 2009
7. Sandor Kovacs, Dorin Bocu, *Manualul utilizatorului de PC pentru obținerea Permisului European de Conducere a Computerului*, Editura Albastră, 2005
8. Bradford, Marianne, *Modern ERP: select, implement and use today's advanced business systems*, North Carolina State University, 2010
9. Schmitt, Christopher, *HTML5 cookbook*, O'Reilly, 2012
10. Severance, Charles, *Using Google App Engine*, O'Reilly, 2009
11. Microsoft, *Ms Dynamics CRM*, available documents on [www.microsoft.ro](http://www.microsoft.ro) and <https://www.microsoft.com/en-us/dynamics365/what-is-crm>
12. Oracle, available documents on [www.oracle.com](http://www.oracle.com)
13. Tutorials Point, *Microsoft Dynamics CRM Tutorial*, [https://www.tutorialspoint.com/microsoft\\_crm/index.htm](https://www.tutorialspoint.com/microsoft_crm/index.htm)

**Geographic Information Systems**

1. Spatial data types and their storage in spatial databases
2. Data structures for spatial data representation and indexing
3. Spatial data processing
4. Elements of data visualization in GIS



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5. Building extensions for specific geoprocessing and user interaction
6. Presenting the ArcObjects framework
7. ArcGIS versus commercial GIS products - Google Earth
8. GIS Web - map exposure in the Internet;

### **Bibliography**

1. Pouria, Amiriani, Beginning ArcGIS for Desktop Development Using .NET, John Wiley & Sons, Ltd, 2013
2. David Arctur, Michael Zeiler, Designing Geodatabases: Case Studies in GIS Data Modeling, Esri Press, 2004
3. Silas Toms, ArcPy and ArcGIS – Geospatial Analysis with Python, Packt Publishing Ltd, 2015
4. John E. Harmon, Steven J. Anderson, The Design and Implementation of Geographic Information Systems, John Wiley & Sons, 2003
5. George Korte, The GIS Book, OnWord Press, 2000
6. Guttman, A., R-Trees: A Dynamic Index Structure for Spatial Searching, Readings in DATABASE SYSTEMS, Morgan Kaufmann Publishers, San Francisco, 1994
7. Samet, H., Aref, W., Spatial Data Models and Query Processing, Modern Database Systems: The Object Model, Interoperability and Beyond,, Addison-Wesley, 1995
8. ArcGIS 10, Getting Started with ArcGIS, ESRI, 2010

### **Multimedia**

1. Multimedia concept. The classes of multimedia applications. Examples of multimedia applications in marketing.
2. Hardware and software issues required to develop and use the multimedia applications. Technologies and equipment.
3. The image. Bitmap and vector image types. Image compression and decompression.
4. Animation. Graphics. Tools for image acquisition and processing.
5. Sound. Computer sound. Numerical audio formats. Standards sound files compression. Tools for acquisition and processing of audio sequences.
6. Digital video. Conversion from analog to digital video. Video on computer. Video compression algorithms and standards. Tools for video processing.
7. Integration of multimedia resources in Web and mobile applications

### **Bibliography**

1. Stamou, Giorgos ; Kollias, Stefanos, *Multimedia content and the semantic web : standards, methods and tools*, Wiley
2. Dârdală, M., Smeureanu, I., Reveiu, A, *Tehnologii multimedia*, Editura ASE, Bucuresti, 2008, România
3. Brad Dayley, DaNae Dayley, Adobe Photoshop CS6 Bible, John Wiley & Sons,, 2012
4. Adele Droblas, Seth Greenberg, Adobe Premiere Pro Bible, Wiley, 2010