

Bachelor program INFORMATION TECHNOLOGIES year 2014/2015

Short introduction:

First two years of study includes generic courses; teaching main scientific topics in two-semester courses – Mathematics, Computer science fundamentals, Statistics, Electronics, Introduction to programming, Law fundamentals; practical courses such as Programming in C++, Java, Computer networks, Computer architectures, Operating systems and others. During the third and the fourth years the study is organized in special program courses and extracurricular courses. From the third year the program offers two modules, leading to professional qualification.

Subject and professional qualification:

Module: Business Informatics

Subject: Information technologies

Qualification: Computer scientist

Module: Computer games technologies

Subject: Information technologies

Qualification: Computer scientist

Practical education:

The practical education includes working in HP lab, NBU computer science lab, as well as training in software development companies and IT departments.

International mobility:

The program gives opportunities for international student mobility with universities in UK, France, Belgium and Germany.

Competencies of successfully graduated students:

- knowledge in theoretical fundamentals in computer science, several programming languages;

- abilities to use different development platforms and technologies; to create information models and develop and administer information systems. The program is supported by XS Software and Haemimont Games.

Graduation:

After collecting all credits students in the bachelor program can graduate in one of two ways – by thesis or by exam. Apart from the the professional qualification given by the program, the students can get a second subject by enrolling in minor program – second subject.

The rules and ways to graduate are according to the "Standard for getting a degree".

Profession and potential positions:

Successfully graduated students are: computer science and communication specialists; system administrators, software developers, programmers, database designers and administrators, web content and multimedia developers.

Department, offering the program:

Computer Science

Program directors:

ch. assist. prof. Philip Andonov, PhD.

office hours:

Tuesday: 11:00 - 13:00

Wednesday: 11:00 - 13:00

Thursday: 11:00 - 13:00

e-mail: fandonov@nbu.bg

phone: 02/8110 610

Office: Building 2, office 610

prof. Angel Angelov

office hours:

Monday: 11:10 - 13:10

Tuesday: 11:10 - 13:10

Friday: 11:10 - 13:10

e-mail: cst_director@abv.bg

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Office: Building 2, office 610

ch. assist. prof. Valentina Ivanova

office hours:

Tuesday: 11:00 - 12:30

Thursday: 11:30 - 14:00

Friday: 11:30 – 13:30

e-mail: v.ivanova@nbu.bg

Office: Building 2, office 610

ch. assist. prof. Yoana Minkova

office hours:

Monday: 12:00 - 16:30

Tuesday: 11:30 - 13:30

Thursday: 12:30 - 14:30

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Office: Building 2, office 610

assist. prof. Desislava Georgieva

office hours:

Tuesday: 11:30 - 13:30

Wednesday: 09:30 - 11:30

Thursday: 09:00 - 11:00

e-mail: dvelcheva@nbu.bg

тел.: 02/8110 610

Office: Building 2, office 610

semester 1

Required lecture courses		
GENB005 Computer science fundamentals	assoc. prof. Petya Asenova, PhD ch. assist. prof. Valentina Ivanova, PhD	30 hours, 1/2, 3 credits
Required electives		
GENB006 Introduction to algorithms and programming	assoc. prof. Velina Slavova, PhD ch. assist. prof. Philip Andonov, PhD	30 hours, 1/2, 3 credits
GENB031 Composition in visual arts	assoc. prof. Michael Tchomakov	30 hours, 1/2, 3 credits
Practical courses (credits)		
CITB101 C and C++ programming languages	assoc. prof. Vasil Fournadjiev, PhD	30 hours 3 credits
<i>CITB102 Laboratory exercises in programming</i>	assoc. prof. д-р Vasil Fournadjiev, PhD	30 hours 3 credits
CITB103 Linear Algebra	acad. Petar Kenderov, д.н. assoc. prof. Marin Marinov, PhD	30 hours 3 credits
Practical courses (no credits)		
CSCB021 Discrete mathematics	ch. assist. prof. Stoyan Boev, PhD	30 hours

semester 2

Required lecture courses		
GENB005 Computer science fundamentals	assoc. prof. Petya Asenova, PhD ch. assist. prof. Valentina Ivanova, PhD	30 hours, 2/2, 3 credits
Required electives		
GENB006 Introduction to algorithms and programming	assoc. prof. д-р Velina Slavova, PhD ch. assist. prof. Philip Andonov, PhD	30 hours, 2/2, 3 credits
GENB031 Composition in visual arts	assoc. prof. Michael Tchomakov	30 hours, 2/2, 3 credits
Practical courses (credits)		
CITB201 Object-oriented programming (C++)	assoc. prof. Nikolay Kirov, PhD	30 hours 3 credits
<i>CITB202 Laboratory exercises in object-oriented programming</i>	гл.ас. д-р Валентина Иванова	30 hours 3 credits
CSCB023 Automates and computability	assoc. prof. д-р Красимир Манев, ch. assist. prof. Stoyan Bоеv, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB113 Applications of linear algebra	acad. Petar Kenderov, assoc. prof. д-р Marin Marinov	30 hours

semester 3

Required lecture courses		
GENB045 Calculus	assoc. prof. д-р Marin Marinov	30 ч, 1/2, 3 credits
Required electives		
GENB002B Statistics	prof. Krasimir Kalinov, PhD	30 hours, 1/2, 30 credits
GENB0041 Electronics	prof. Stefan Koutsarov ch. assist. prof. Tereza Stefanova	30 ч, 1/2, 3 credits
Practical courses (credits)		
CITB301 Computer system architectures	assoc. prof. Emil Stoylov	30 hours 3 credits
CITB302 Operating Systems	assoc. prof. Nikolay Dokev, PhD	30 hours 3 credits
CITB303 Data structures	assoc. prof. Nikolay Kirov, PhD	30 hours 3 credits
CITB304 Exercises in data structures	ch. assist. prof. Lasko Laskov, PhD	30 hours 3 credits
CITB331 Programming in Python	ch. assist. prof. Philip Andonov, PhD.	30 hours 3 credits
<i>CITB510 Raster graphics</i>	<i>assoc. prof. Pancho Tomov, PhD</i>	<i>30 hours 3 credits</i>
Practical courses (no credits)		
CSCB010 Advanced programming	assoc. prof. Nikolay Kirov, PhD	30 hours
CSCB315 Analytical geometry	ch. assist. prof. Stoyan Boev, PhD	30 hours

semester 4

Required lecture courses		
GENB045 Calculus	assoc. prof. д-р Marin Marinov	30 hours, 2/2, 3 credits
Required electives		
GENB002B Statistics	prof. Krasimir Kalinov, PhD	30 hours, 2/2, 30 credits
GENB0041 Electronics	проф. Stefan Koutsarov ch. assist. prof. Tereza Stefanova	30 hours, 2/2, 3 credits
Practical courses (credits)		
CITB305 Programming in Java	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB401 Introduction to Artificial Intelligence	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB402 Computer networks	assoc. prof. д-р Vasil Fournadjiev	30 hours 3 credits
CITB403 Analysis and differential geometry by means of symbolic calculus	assoc. prof. д-р Marin Marinov	30 hours 3 credits
CITB431 Resource management systems	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
<i>CITB503 Law and ethical aspects in IT</i>	<i>Denitsa Topchiiska, PhD</i>	<i>30 hours 3 credits</i>
Practical courses (no credits)		
CITB405 Application programming in Java	ch. assist. prof. Martin Ivanov, PhD	30 hours
CITB432 Programming in Perl	assoc. prof. Dimitar Atanasov, PhD	30 hours

**Module Business computer science
semester 5**

Required lecture courses		
CITB719 IT Business	<i>Vladimir Belperchinov</i>	<i>30 hours 3 credits</i>
CITB506 Database fundamentals	assoc. prof. Juliana Peneva, PhD	30 hours 3 credits
CITB507 Client-server technologies	Latchesar Tomov, PhD	30 hours 3 credits
CITB551 Server architectures	ch. assist. prof. Rositsa Goleva	30 hours 3 credits
CITB552 Real-time systems	prof. Ivan Ivanov	30 hours 3 credits
CITB553 IT business process management	Nikolay Doushkov	30 hours 3 credits
CITB554 Optimization	assoc. prof. д-р Marin Marinov	30 hours 3 credits
CITB556 Object-oriented programming in UML	assoc. prof. George Touparov, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB542 Social networks as business communication instrument	Lyudmil Douridanov, PhD	30 hours
CITB555 Knowledge extraction from data	assoc. prof. Dimitar Atanasov, PhD	30 hours
Extracurricular courses (credits)		

CITB527 Project: Client web technologies	Latchesar Tomov, PhD	30 hours 3 credits
CITB574 Project: Optimization	assoc. prof. д-р Marin Marinov	30 hours 3 credits
CITB575 Individual work: Knowledge extraction from data	assoc. prof. Dimitar Atanasov, PhD	30 hours 3 credits
CITB679 Practice in business information systems	assoc. prof. Juliana Peneva, PhD assoc. prof. д-р Velina Slavova	90 hours 9 credits

semester 6

Required lecture courses		
CITB602 Server web technologies	Latchesar Tomov, PhD	30 hours 3 credits
CITB651 Local Networks	assoc. prof. д-р Vasil Fournadjiev	30 hours 3 credits
CITB652 Network hardware	assoc. prof. Emil Stoylov	30 hours 3 credits
CITB653 Unix operating systems	ch. assist. prof. Rositsa Goleva	30 hours 3 credits
CITB654 Administering Unix operating systems	ch. assist. prof. Rositsa Goleva	30 hours 3 credits
CITB655 Data warehouse	assoc. prof. Dimitar Atanasov, PhD	30 hours 3 credits
CITB658 Operational research	acad. Petar Kenderov assoc. prof. д-р Marin Marinov	30 hours 3 credits
CITB709 Information systems	assoc. prof. Juliana Peneva, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB607 Practical exercises in web-server technologies	Latchesar Tomov, PhD	30 hours
CITB656 Database administration	ch. assist. prof. Mariana Raykova	30 hours
Extracurricular courses (credits)		

CITB674 Individual work: Administering Unix operating systems	ch. assist. prof. Rositsa Goleva	30 hours 3 credits
CITB675 Individual work: Data warehouse	assoc. prof. Dimitar Atanasov, PhD	30 hours 3 credits
CITB678 Individual work: Operational research	acad. Petar Kenderov assoc. prof. д-р Marin Marinov	30 hours 3 credits
CITB679 Business information system practice	assoc. prof. Juliana Peneva, PhD assoc. prof. д-р Velina Slavova	90 hours 9 credits

semester 7

Required lecture courses		
CITB505 Wireless computer networks	assoc. prof. Emil Stoylov	30 hours 3 credits
<i>CSCB708 IT careers</i>	prof. Neli Maneva, Nevena Nikolova	<i>30 hours 3 credits</i>
CITB734 Client-server information technologies	assoc. prof. George Touparov, PhD	30 hours 3 credits
CITB752 Client data protection	Vladimir Belpertchnov	30 hours 3 credits
CITB753 Internet business services	Vladimir Belpertchnov	30 hours 3 credits
CITB754 Network security	assist. prof. Nikolay Nedyalkov	30 hours 3 credits
CITB755 Remote access network technologies	assoc. prof. Emil Stoylov	30 hours 3 credits
CSCB707 Noise protection coding	prof. Ivan Landjev, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB756 Laboratory exercises in мрежова сигурност	assist. prof. Nikolay Nedyalkov	30 hours
CITB757 Business information system design	Vladimir Belpertchnov	30 hours
Extracurricular courses (credits)		
CITB720 Business computer science internship	ch. assist. prof. Stoyan Boev, PhD	120 hours 12 credits

semester 8

Required lecture courses		
CITB806 Cryptography	prof. Ivan Landjev, PhD	30 hours 3 credits
CITB811 Decision support systems	ch. assist. prof. Philip Andonov, PhD.	30 hours 3 credits
CITB851 Electronic payment systems	Tsonka Atanasova	30 hours 3 credits
CITB852 Clearing and settlement systems	Tsonka Atanasova	30 hours 3 credits
<i>CITB855 Risk management</i>	<i>Ivan Kostov</i>	<i>30 hours 3 credits</i>
<i>CSCB845 Computer security</i>	<i>Ivan Blagoev</i>	<i>30 hours 3 credits</i>
Practical courses (no credits)		
CITB856 Local networks administration	assoc. prof. д-р Vasil Fournadjiev	30 hours
CITB857 Software project implementation	ch. assist. prof. Valentina Ivanova, PhD	30 hours
Extracurricular courses (credits)		
CITB191 Business computer science internship	ch. assist. prof. Stoyan Boev, PhD	180 hours 18 credits

Module Computer Games

semester 5

Required lecture courses		
CITB433 Relational database design and development	ch. assist. prof. Mariana Raykova ch. assist. prof. Philip Andonov, PhD.	30 hours 3 credits
CITB501 Computer games fundamentals	prof. Petar Stanchev, PhD	30 hours 3 credits
CITB502 Game theory	assoc. prof. Dimitar Atanasov, PhD	30 hours 3 credits
CITB504 Computer graphics	assoc. prof. Stoyan Maleshkov, PhD	30 hours 3 credits
CITB506 Database principles	assoc. prof. Juliana Peneva, PhD	30 hours 3 credits
CITB507 Client web technologies	Latchesar Tomov, PhD	30 hours 3 credits
CITB508 3-D computer modelling	assoc. prof. Stoyan Maleshkov, PhD assist. prof. Desislava Georgieva	30 hours 3 credits
CITB602 Server web-technologies	Latchesar Tomov, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB505 Wireless computer networks	assoc. prof. Emil Stoylov	30 hours
CITB509 Practical exercises in computer games	prof. petar Stanchev, PhD	30 hours
Extracurricular courses (credits)		

CITB520 Computer games practice	ch. assist. prof. Martin Ivanov, PhD ch. assist. prof. Lasko Laskov, PhD	90 hours 9 credits
CITB522 Project: Game theory	assoc. prof. Dimitar Atanasov, PhD	30 hours 3 credits
CITB527 Project: Client web technologies	Latchesar Tomov, PhD	30 hours 3 credits
CITB530 Project: Raster graphics	assoc. prof. Stoyan Maleshkov, PhD	30 hours 3 credits

semester 6

Required lecture courses		
CITB601 Graphic programming	assoc. prof. Stanislav Ivanov, PhD	30 hours 3 credits
CITB603 Computer games generators	assoc. prof. Evgeni Krastev	30 hours 3 credits
CITB604 Database programming	ch. assist. prof. Mariana Raykova	30 hours 3 credits
CITB605 Realistic images	assist. prof. Desislava Georgieva	30 hours 3 credits
CITB608 Web-based game programming	Alexander Blagoev, Nikolay Bekirov	30 hours 3 credits
CITB631 Simulation modeling in computer games	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB658 Operational research	acad. Petar Kenderov, PhD assoc. prof. д-р Marin Marinov	30 hours 3 credits
CSCB651 Multimedia presentation fundamentals	assoc. prof. Petya Asenova, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB606 Computer games sounds	ch. assist. prof. Stela Atanasova	30 hours
CITB607 Practical exercises server web technologies	Latchesar Tomov, PhD	30 hours
Extracurricular courses (credits)		
CITB621 Project: Graphic programming	assoc. prof. Stanislav Ivanov, PhD	30 hours 3 credits
CITB624 Project: Database programming	ch. assist. prof. Mariana Raykova	30 hours 3 credits
CITB625 Project: Realistic images	assist. prof. Desislava Georgieva	30 hours 3 credits
CITB680 Web-based game programming practice	Alexander Blagoev, Nikolay Bekirov	90 hours 9 credits

semester 7

Required lecture courses		
CITB701 Game design	Alexander Blagoev, Nikolay Bekirov	30 hours 3 credits
CITB702 Computer animation	Vesselin Georgiev, PhD	30 hours 3 credits
CITB703 Scenario programming	assist. prof. Boyko Bantchev	30 hours 3 credits
CITB704 Mobile device operating systems	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB705 Standard library programming	assoc. prof. Evgeny Krastev, PhD	30 hours 3 credits
CITB706 Computer games interfaces	assoc. prof. Angel Angelov, PhD	30 hours 3 credits
CSCB707 Noise protection coding	prof. Ivan Landjev, PhD	30 hours 3 credits
CITB766 Software technologies	assoc. prof. Juliana Peneva, PhD assoc. prof. Stanislav Ivanov, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB707 Digital video processing	assoc. prof. Evgeny Krastev, PhD	30 hours
CITB708 3-D games	Kalin Dimitrov, PhD	30 hours
Extracurricular courses (credits)		
CITB721 Internship по проектиране на игри	assoc. prof. Dimitar Atanasov, PhD ch. assist. prof. Valentina Ivanova, PhD	120 hours 12 credits

semester 8

Required lecture courses		
CITB801 Games with AI elements	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB803 Computer games business	assoc. prof. Angel Angelov, PhD	30 hours 3 credits
CITB804 Mobile games development	ch. assist. prof. Martin Ivanov, PhD	30 hours 3 credits
CITB805 Business simulation games	Nadejda Danabasheva	30 hours 3 credits
CITB806 Cryptography	prof. Ivan Landjev, PhD	30 hours 3 credits
CITB845 Computer security	prof. Evgeny Nikolov, PhD	30 hours 3 credits
Practical courses (no credits)		
CITB809 2 D mobile games	ch. assist. prof. Martin Ivanov, PhD	30 hours
CITB810 Computer games software projects implementation	ch. assist. prof. Valentina Ivanova, PhD Latchesar Tomov, PhD	30 hours
Extracurricular courses (credits)		
CITB900 Computer games internship	ch. assist. prof. Martin Ivanov, PhD	180 hours 18 credits