

UNIVERSITY of RUSE
8 STUDENTSKA STREET



The new building

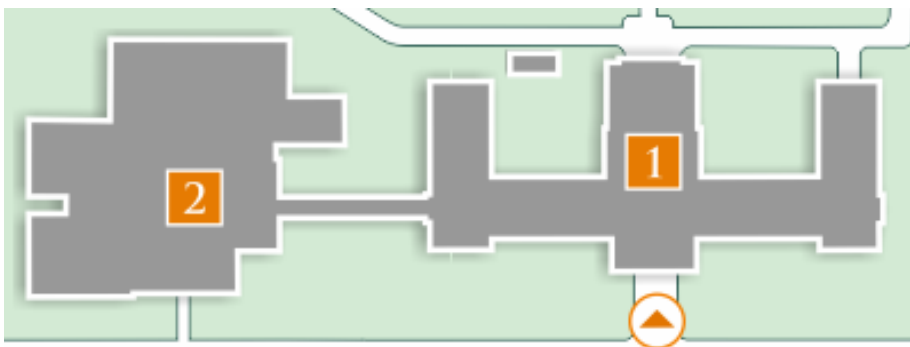
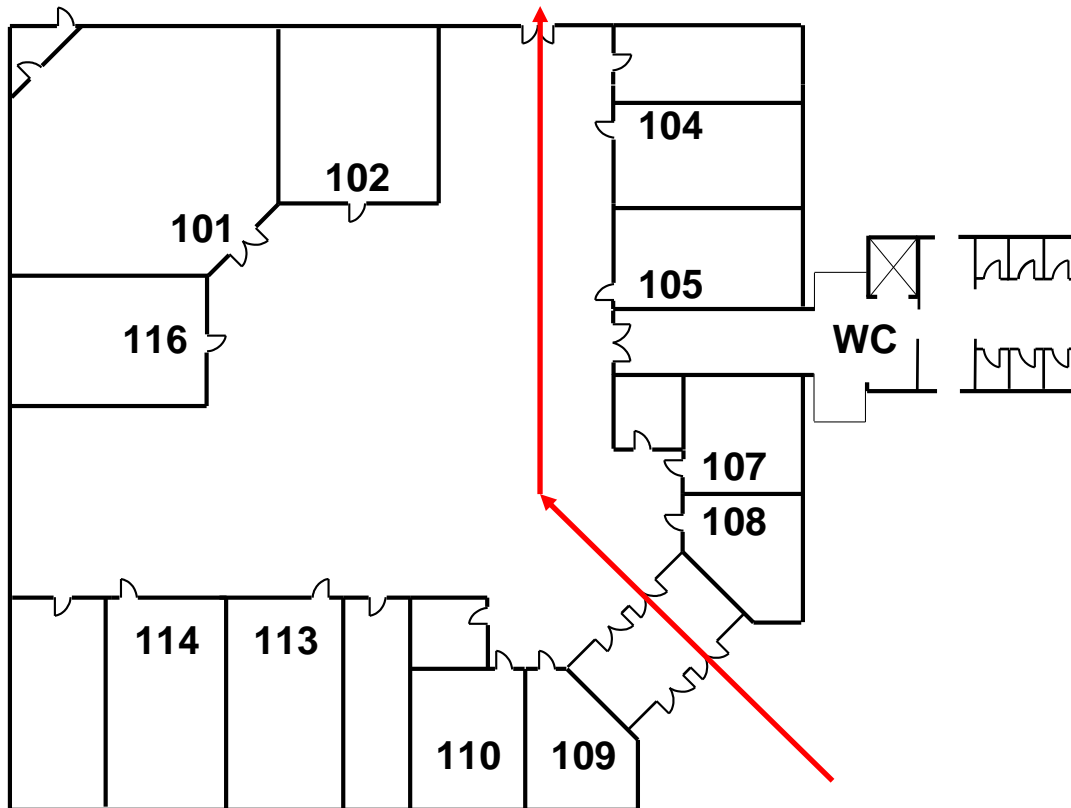


The main building



THE NEW BUILDING

Hall 2Г.204 SIEMENS



CAFE SNACK

RESTAURANTS

BANK



Dear Participants,

University of Ruse is a member of Eduroam world project and if your University/Organization is a member too, you can use your credentials to access internet via our wireless network.

You can also use free WIRELESS INTERNET via access points named **CompSys** with password **compsys17**.

You can also use the COMPUTERS in the Centre for PhD students - main building, in the middle of the 3 floor 1.411-4.

◆ CONFERENCE OBJECTIVE

The **CompSysTech'17** International Conference is organized by the **Association for Computing Machinery, N.Y., USA via its Bulgarian Chapter – acmbul** and by the **Bulgarian Academic Society of Computer Systems and Information Technologies** and its OBJECTIVE is to intensify the information exchange of results in theoretical research and practical developments in the field.

CompSysTech'17 is organized under the patronage of:

- **Bulgarian Ministry of Education and Science;**
- **John Atanasoff Union of Automation and Informatics**

◆ INTERNATIONAL PROGRAMME COMMITTEE

• **Honorary Co-Chairs:**

Kiril Boyanov (Member of BAS, Bulgaria)

Vasil Sgurev (Member of BAS, Bulgaria)

• **Chair:**

Boris Rachev (Bulgaria)

• **Scientific Secretary:**

Dimo Dimov (Bulgaria)

• **Secretary:**

Yordan Kalmukov (Bulgaria)

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 Daniela Chuda (Slovakia)
 Darina Dicheva (United States)
 Dimitris Karagiannis (Austria)
 Douglas Harms (United States)
 Erika Nazaruka (Latvia)
 Eugenijus Macikenas (Lithuania)
 Francisca Losavio (Venezuela)
 George Mavrommatis (Greece)
 Georgi Todorov (Bulgaria)
 Grisha Spasov (Bulgaria)
 Hannu Jaakkola (Finland)
 Heinz-Dietrich Wuttke (Germany)
 Hilda Tellioglu (Austria)
 Iliya Georgiev (United States)

Ivan Jelinek (Czech Republic)
 Janis Grundspenkis (Latvia)
 Janusz Jabłonowski (Poland)
 Jaroslav Pokorny (Czech Republic)
 Jouni Ikonen (Finland)
 Jukka Teuhola (Finland)
 Juliana Peneva (Bulgaria)
 Karl Jones (United Kingdom)
 Kostadin Kratchanov (Turkey)
 Krassen Stefanov (Bulgaria)
 Ladislav HUDEC (Slovakia)
 Leon Rothkrantz (Netherlands)
 Leoneed Kirilov (Bulgaria)
 Lyudmil Dakovski (Bulgaria)
 Marco Porta (Italy)
 Margarita Todorova (Bulgaria)
 Maria Koziri (Greece)
 Maria Marcelino (Portugal)
 Marite Kirikova (Latvia)
 Markus Helfert (Ireland)
 Martin Llamas Nistal (Spain)
 Melih İnal (Turkey)
 Michael Vassilakopoulos (Greece)
 Mirjana Ivanovic (Serbia)
 Neli Maneva (Bulgaria)
 Nicole Levy (France)
 Nikolay Mehandjiev (United Kingdom)

Nikos Konofaos (Greece)
Novruz Allahverdi (Turkey)
Olegas Vasilecas (Lithuania)
Pavol Navrat (Slovakia)
Peter Stanchev (United States)
Pino Caballero-Gil (Spain)
Radi Romansky (Bulgaria)
Rebecca Bartlett (United Kingdom)
Roumen Nikolov (Bulgaria)
Sebastiano Battiato (Italy)

Stavros Nikolopoulos (Greece)
Stoicho Stoichev (Bulgaria)
Tadeusz Morzy (Poland)
Tanja Urbančič (Slovenia)
Thanasis Loukopoulos (Greece)
Timos Sellis (Australia)
Tzvetomir Vassilev (Bulgaria)
Ville Leppänen (Finland)
Vladimir Lazarov (Bulgaria)
Yannis Manolopoulos (Greece)

◆ NATIONAL ORGANIZING COMMITTEE

• Co-Chairs:

Angel Smrikarov (Bulgaria)
Tzvetomir Vassilev (Bulgaria)

• Secretary:

Eugenia Dimitrova (Bulgaria)

• Members:

Tsvetozar Georgiev (Bulgaria)
Stoyanka Smrikarova (Bulgaria)
Galina Ivanova (Bulgaria)
Yuksel Aliev (Bulgaria)

◆ TOPICS

1. Computer Hardware.
2. Computer Software.
3. Application Aspects of
Computer Systems and Technologies.
4. Educational Aspects of
Computer Systems and Technologies
(ICT-based educational technologies).
5. The Youth and the Computer Systems and Technologies
 - PhD Students' Section;
 - Students' Section;
 - High-School Students' Section.

Friday, 23th June 2017
08:00 – 18:00
New building, Hall 2Г.207
REGISTRATION

15:00
New building, Hall 2Г.204 SIEMENS

OPENING

WELCOME

Chair: **Angel Smrikarov**

MUSICAL GREETING



PLENARY SESSION

Chair: **Boris Rachev**



VLADIMIR KOYLAZOV

Chaos Group, Bulgaria, USA, South Korea and Japan

Keynote on:

Developing V-Ray: History and Lessons



MARITE KIRIKOVA

Department of Artificial Intelligence and Systems Engineering, Riga Technical University, Latvia

Keynote on:

Continuous Requirements Engineering



DARINA DICHEVA

Department of Computer Science, Winston-Salem State University, USA

Keynote on:

Gamification in Education: A Passing Trend or A Genuine Potential?

DISCUSSIONS

17:00

Walking tour of the University of Ruse



Visiting the multimedia museum of the University of Ruse

Friday, 23th June 2017
19:30
SOCIAL EVENING IN THE RESTAURANT “RIGA”
22 PRIDUNAVSKI BLVD
2 floor



PROGRAMME SUMMARY

Saturday, 24th June 2017

	Hall 2.204	Hall 2.205	Hall 2.206	Hall 2.207
9:00 – 11:30	Session A1 Artificial Intelligence and Information Retrieval Number of papers: 8	Session B Operating Systems and Network Security Number of papers: 7	Session D Image Processing and Computer Vision Number of papers: 5	Session F e-Learning Number of papers: 6
11:30 – 12:00	COFFEE BREAK 			
12:00 – 14:00	Session A2 Artificial Intelligence Number of papers: 7	Session C Software Engineering Number of papers: 6	Session E Hardware Number of papers: 3	Session G The Youth and the ICT Number of papers: 3
14:00 – 14:30	THE BEST PAPERS AWARDS 			

Session A1

Chair: **Vladimir Lazarov**

Co-Chair: **Antonio Maratea**

Scientific Secretary: **Borislav Banchev**

Saturday, 24th June 2017

9:00 – 11:30

New building, Hall 2.204

ARTIFICIAL INTELLIGENCE AND INFORMATION RETRIEVAL

1. **Evaluating coherence of essays using sentence-similarity networks**
Kaja Zupanc, Miloš Savić, Zoran Bosnić, Mirjana Ivanović
2. **Outlier detection via deep learning architecture**
Irina Kakanakova, Stefan Stoyanov
3. **Is the Visitor Reading or Navigating?**
Peter Krátky, Tomáš Repiský, Daniela Chudá
4. **Modelling of Educational Data Following Big Data Value Chain**
Dessislava Petrova-Antonova, Olga Georgieva, Sylvia Ilieva
5. **A Conceptual Model of a Virtual Collaboration Space for Bat Scientists**
Angel Ivanov, Milena Georgieva, Stanimira Deleva, Daniela Orozova
6. **Text classification based on enriched vector space model**
Tsvetanka Georgieva-Trifonova
7. **Text Mining Based Adaptive Case Management Automation in the Field of Forensic Medicine**
Borislav Banchev
8. **An algorithm for Micro-localization in Large Public Buildings**
Rosen Ivanov

DISCUSSIONS

11:30 – 12:00

Foyer

Coffee Break

Session A2

Chair: **Tsvetozar Georgiev**

Co-Chair: **Daniela Chudá**

Scientific Secretary: **Borislav Banchev**

Saturday, 24th June 2017

12:00 – 14:00

New building, Hall 2.204

ARTIFICIAL INTELLIGENCE

1. **Ant colony optimization algorithm for traffic flow estimation**
Milena Karova, Nikola Vasilev, Ivaylo Penev
2. **“Compatible” Fuzzy Cognitive Maps For Direct And Inverse Inference**
Vadim Borisov, Alexander Fedulov, Yaroslav Fedulov
3. **Situation calculus for multiple action representation**
Michael Zernov
4. **Extended Graph Backbone for Motif Analysis**
Antonio Maratea, Alfredo Petrosino, Mario Manzo
5. **Incremental Rerouting Algorithm for single-vehicle VRPPD**
Roman Guralnik
6. **Neural network application in financial area**
Roumen Trifonov, Dilyana Budakova, Galya Pavlova
7. **Smart multifunctional digital content ecosystem using emotion analysis of voice**
Alexander I. Iliev, Peter Stanchev

DISCUSSIONS

14:00

**Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS**

Session B

Chair: **Dimo Dimov**
Co-Chair: **Stavros Nikolopoulos**
Scientific Secretary: **Slavina Ivanova**

Saturday, 24th June 2017
9:00 – 11:30
New building, Hall 2.205

OPERATING SYSTEMS AND NETWORK SECURITY

1. **Defending Hardware-based Attacks on Trusted Computing using a Hardware-Integrity Attestation Protocol**
Stavros D. Nikolopoulos, Iosif Polenakis
2. **A Comparison of Record and Play Honeypot Designs**
Jarko Papalitsas, Sampsa Rauti, Ville Leppänen
3. **A Survey on Application Sandboxing Techniques**
Samuel Laurén, Sampsa Rauti, Ville Leppänen
4. **Pass-the-Hash – one of the most prevalent yet underrated attacks for credentials theft and reuse**
Dimo Dimov, Yuliyana Tsoneva
5. **Cyber Threat Hunting through the use of an Isolation Forest**
Dimitar Karev, Chris McCubbin, Ruslan Vaulin
6. **What should application developers understand about mobile phone position data**
Oskari Jahkola, Ari Happonen, Antti Knutas, Jouni Ikonen
7. **A Practical Approach to Spam Mitigation**
Dobrin Tashev

DISCUSSIONS

11:30 – 12:00
Foyer
Coffee Break

Session C

Chair: **Boris Novikov**
Co-Chair: **Aneliya Ivanova**
Scientific Secretary: **Slavina Ivanova**

Saturday, 24th June 2017
12:00 – 14:00
New building, Hall 2.205

SOFTWARE ENGINEERING

1. **Measuring software security from the design of software**
Marko Saarela, Shohreh Hosseinzadeh, Sami Hyrynsalmi, and Ville Leppänen
2. **A Fine-Grained Access Control Model and Implementation**
Ekaterina Gorskova, Boris Novikov, and Manoj Kumar Shukla
3. **Limited Resources Platform Implementation of Complex Event Processing System**
Ján Lang, Peter Gabaš
4. **Requirements management in students' software development projects**
Pekka Mäkiaho, Timo T. Poranen, Zheyang Zhan
5. **A system for website data management in a website building system**
Dimitar Dimitrov
6. **Informatics Solutions for Smart Trading on Wholesale Electricity Markets Containing RES Bidders**
Adela Bara, Simona Vasilica Oprea, Adina Uta, Osman Bulent Tor, Mahmut Erkut Cebeci

DISCUSSIONS

14:00
Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS

Session D

Chair: **Milena Lazarova**

Co-Chair: **Tzvetomir Vassilev**

Scientific Secretary: **Yuksel Aliev**

Saturday, 24th June 2017

9:00 – 11:30

New building, Hall 2.206

IMAGE PROCESSING AND COMPUTER VISION

1. **An approach for mammography image segmentation**
Mariana Stoeva, Violeta Bozhikova
2. **Image Based Steganography Using Modified LSB Insertion Method with Contrast Stretching**
Antoniya Tasheva, Zhaneta Tasheva, Plamen Nakov
3. **CutSurf – a software tool for cut surface evaluation of white cheese**
Atanaska Bosakova-Ardenska, Hristina Andreeva, Petya Boyanova, Peter Panayotov
4. **Real Time GPU Accelerated Radar Scan Conversion and Visualization**
Vesselin Pezhgorski, Milena Lazarova
5. **Mass-spring Cloth Simulation with Shape Matching**
Tzvetomir Vassilev

DISCUSSIONS

11:30 – 12:00

Foyer

Coffee Break

Session E

Chair: **Svetozar Ilchev**

Scientific Secretary: **Yuksel Aliev**

Saturday, 24th June 2017

12:00 – 14:00

New building, Hall 2.206

HARDWARE

1. Intelligent Planting

Ivan Ivanov, Vasilen Tsvetkov

2. Internet-of-Things Communication Protocol for Low-Cost Devices in Heterogeneous Wireless Networks

Svetozar Ilchev, Zlatoliliya Ilcheva

3. Fuzzy model of an intelligent agent behavior and method of fire extinguishing control

Aleksey Senkov, Aleksander Chepikov

DISCUSSIONS

14:00

**Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS**

Session F

Chair: **Leon Rothkrantz**

Co-Chair: **Galina Ivanova**

Scientific Secretary: **Yavor Stefanov**

Saturday, 24th June 2017

9:00 – 11:30

New building, Hall 2.207

E-LEARNING

1. **An Affective Distant Learning Model Using Avatars as user stand-in**
Leon Rothkrantz
2. **A conceptual model of an electronic appendix called "Nursing file for palliative care", for training students from the speciality of Nurse.**
Greta Koleva, Despina Georgieva, Yavor Stefanov
3. **Utility and Optimal Usage of ICT in Schools**
Valentina Terzieva, Katia Todorova, Yuri Pavlov, Petia Kademova-Katzarova
4. **Designing a Virtual Laboratory for Teaching Programming**
Galya Shivacheva, Veselina Nedeva, Svetoslav Atanasov
5. **3D Augmented Reality Software Solution for Mechanical Engineering Education**
Yuksel Aliev, Vasil Kozov, Galina Ivanova, Aleksandar Ivanov
6. **MATLAB-Based Software Tool for Implementation of Bifid Ciphers**
Adriana Borodzhieva

DISCUSSIONS

11:30 – 12:00

Foyer

Coffee Break

Session G

Chair: **Peter Kenderov**
Co-Chair: **Yordan Kalmukov**
Scientific Secretary: **Yavor Stefanov**

Saturday, 24th June 2017
12:00 – 14:00
New building, Hall 2.207

THE YOUTH AND THE ICT

- 1. Science Duels**
Viktor Toporov, Kristian Spasov, Syuzan Feimova
- 2. Financial Calculator**
Boyana Cholakova, Kalina Mateva, Syuzan Feimova
- 3. Artificial Immune System**
Yoanna Ilieva, Selin Shemsieva, Svetlana Valcheva, Syuzan Feimova

DISCUSSIONS

14:00
Hall 2Г.204 SIEMENS
THE BEST PAPERS AWARDS

**Saturday, 24th June 2017
14:00
New building, Hall 2Г.204 SIEMENS**

**The CHAIRS
of the PROGRAMME COMMITTEE
and
the ORGANIZING COMMITTEE
will bestow
a CRYSTAL PRIZE
to the authors of the best papers.**



**Saturday, 24th June 2017
14:30
New building, Hall 2Г.204 SIEMENS**

**Meeting
of the PROGRAMME COMMITTEE and ORGANIZING COMMITTEE
and the chairs of each sections
of the CompSysTech'17**

Saturday, 24th June 2017

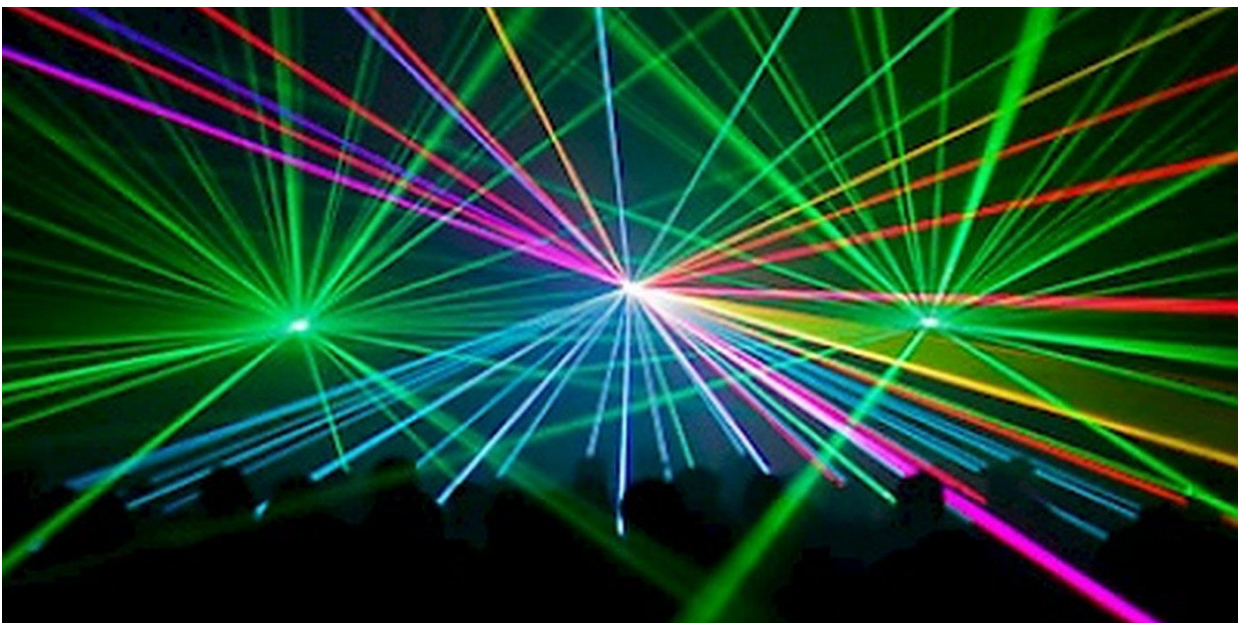
**In the center of the city
Especially for the participants in the conference**



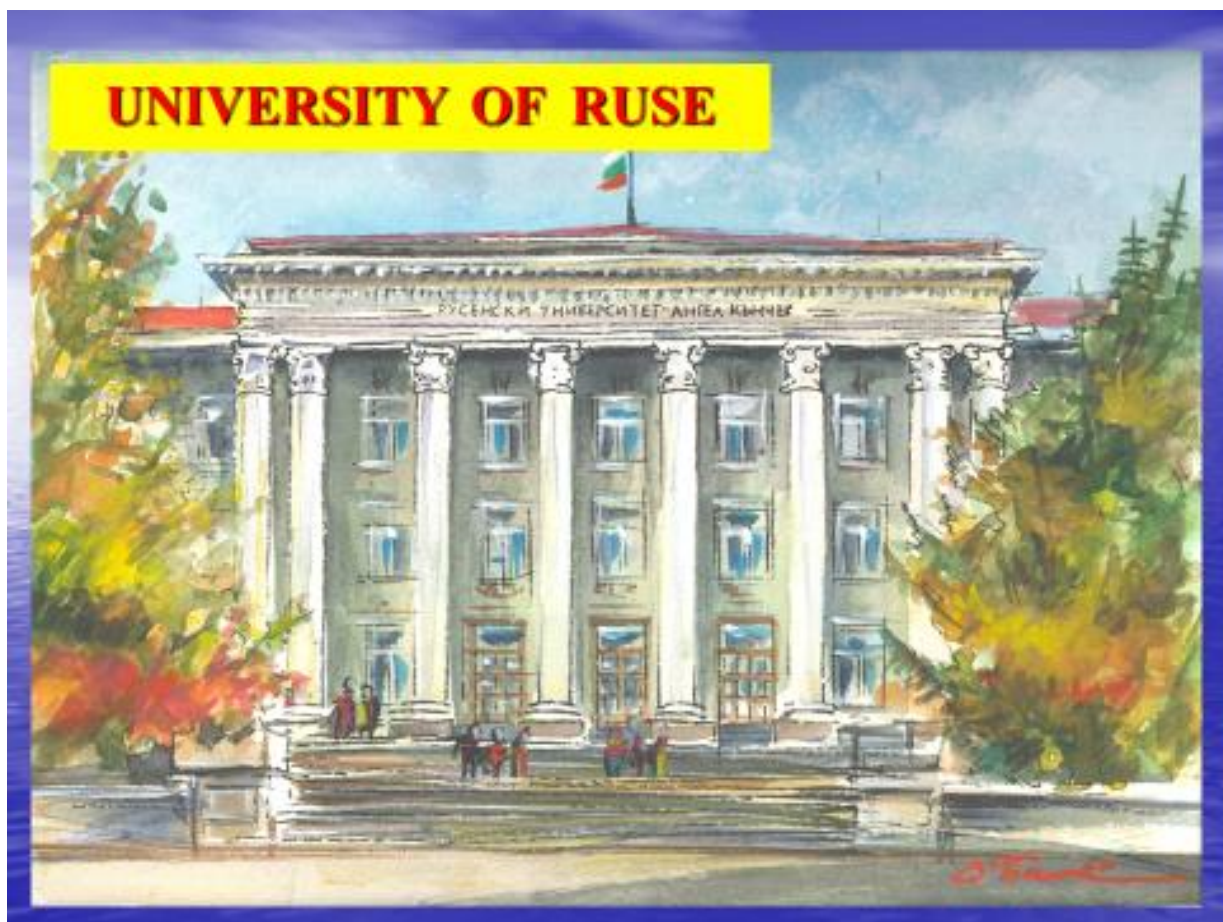
**19:00
CARNIVAL**



**22:00
LIGHTSHOW**



Paintings from RUSE

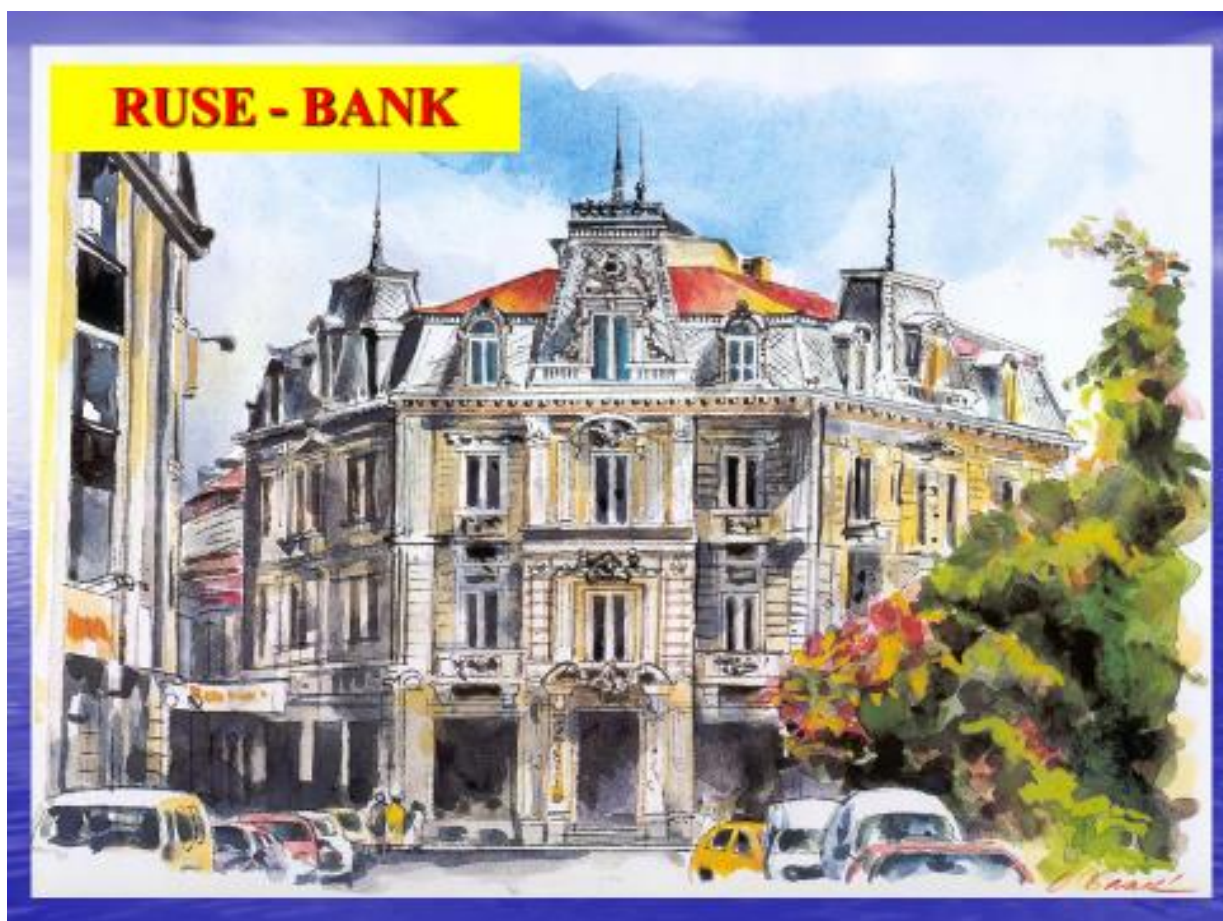
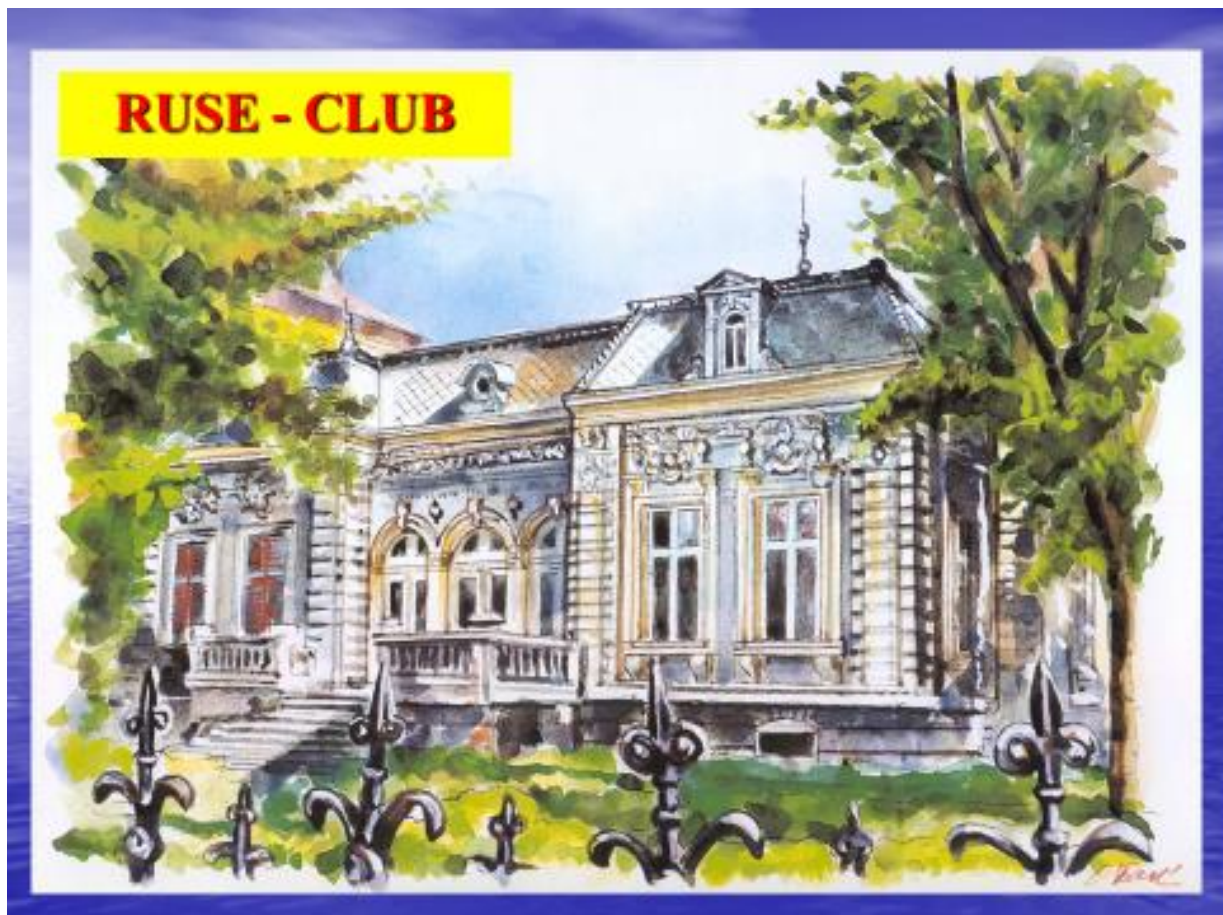


RUSE - LIBRARY



RUSE - MUSEUM





NOTES