

## DESCRIPTION OF THE COURSE

Name of the course: <b>Printing technologies II</b>	Code: <b>BpP20</b>	Semester: <b>7</b>
Type of teaching: Lectures (L) Seminars (S) Laboratory work (LW)	Hours per semester: L – 30 hours S – 15 hours LW – 15 hours	Number of credits: <b>6</b>

### **LECTURER(S):**

Assoc. Prof. Eng. Raycho Raychev, PhD (FME), tel.: +359 89 5581138, e-mail: [rpraichev@tu-plovdiv.bg](mailto:rpraichev@tu-plovdiv.bg)  
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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory course from the curriculum for training students for Bachelor's degree, specialty "Design and printed communications", professional field 5.13 General Engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** In this part of the printing technologies, all digital (NIP) printing methods are considered with their characteristic - masterless contactless information transfer and digitalized workflow. After successfully completing a course of study, students have in-depth knowledge of the technological characteristics and processes of each digital technology, respectively their capabilities and application in the graphics industry.

**DESCRIPTION OF THE COURSE:** The program of the course includes structure, composition and production of the constructive elements, generating or carrying on itself the graphic information; physico-chemistry of the printing process; processes and interactions in the press, technological and technical parameters of each of the technologies. The study of technologies and technological processes is a prerequisite and opportunity for engineering and technological analysis of opportunities for application, integration, development and management of production and technological processes with achieving high quality and cost-effective results.

**PREREQUISITES:** Disperse systems, Physico-chemical processes in printing, Fluid mechanics, Colorimetry, Behavior of materials, Elastic and plastic deformations, Wetting angle, Electrostatic interactions, Chemical interactions, Adhesion and cohesion, Fixing and drying processes.

**TEACHING METHODS:** Lectures using presentations and other visual materials, laboratory exercises with conducting experiments for research and measurement of specific characteristics, protocols with analysis of the conducted experience, seminars in real conditions with a given technological problem for analysis and solution.

**METHOD OF ASSESSMENT:** Written Exam.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1.Sardjeva R., Printing Technologies, Siela Soft and Publishing, ISBN 978-954-28-0606-6, 2009, 424 pp., 2.Sardjeva R., Inks, Printing Materials, Siela Soft and Publishing, ISBN 978-954-28-1383-5, 2013, 260 pp. 3.Helmut Kipphan, Handbook of PrintMedia, Springer,Germany, 2001;4. Lapatuhin B. C., Print processes, Kniga, Moskva, 1976, 5. The Handbook for Digital Printing and Variable\_Data Printingby, 6. Penny K. Bennett, Ph.D. with Harvey Robert Levenson, Ph.D., and Frank J. Romano, PIA/GATF Press Pittsburgh 2007 ECI Guidelines, Guidelines for device-independent color data processing in accordance with the ICC Standard, version 1.1, 05.2000, [www.eci.org](http://www.eci.org), 7. Poprjaduhin P. A., Technologies of printing processes, Kniga, Moskva, 1980, 9. Kozarovitckii, L.A., Paper and Inks in the print processes, Kniga, Moskva 1976; 10. Kolosov A. I., Andreev U.C. and etc.,

## DESCRIPTION OF THE COURSE

Name of the course: <b>Printing systems II</b>	Code: <b>BpP21</b>	Semester: <b>6</b>
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 30 hours	Number of credits: <b>5</b>

### **LECTURER(S):**

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject in the curriculum for training students to obtain Bachelor's degree in Design and Print Communications, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences

**AIMS AND OBJECTIVES OF THE COURSE:** „Printing systems - part II represents the general principles and methods of configuring and construction of different types of digital printing systems as well as the operating principles according to the printing technology and the manufactured products. It is focused on the specific structural elements and mechanisms (an exposure device, a photosensitive cylinder, a fixing device, mechanism for substrate guidance, etc.), basic features, indices, construction and application. Students gain visual knowledge of the digital printing machines during the seminars and learn how to integrate individual components and mechanisms according to the purpose.

**DESCRIPTION OF THE COURSE:** The main topics concern: computer to film technology, computer to plate technology, computer to press/direct imaging technology, methods for printing without a printing plate – NIP technology, electrophotography, inkjet printing, thermography, scanners, 3D printers.

**PREREQUISITES:** Knowledge required: mathematics, physics, mechanics, machine elements, which are the basis of developing universal methods for universal solution to the problems related to printing technology.

**TEACHING METHODS:** Lectures - using slides and case studies; seminars – students learn how to work with Fusion 360, Cura 3D print.

**METHOD OF ASSESSMENT:** Written examination.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Лекции по дисциплината „Печатни машини 2 част“; 2. Helmut Kipphan, Handbook of PrintMedia, Springer, Germany, 2001; 3. Stephen D. Hoath, Fundamentals of Inkjet Printing: The Science of Inkjet and Droplets, Wiley, USA 2012; 4. Периодична професионална литература: сп. Print-Pack magazine, PrintProcess, Expressis verbis, Expressis technics, Printing World, Deutcher Drucker и др.

## DESCRIPTION OF THE COURSE

Name of the course: <b>Graphic design I</b>	Code: <b>BpP22</b>	Semester: <b>7</b>
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 30 hours LW – 30 hours	Number of credits: <b>6</b>
Course project (CP)	Code: <b>BpP26</b>	Number of credits: <b>2</b>

### **LECTURER(S):**

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** [Compulsory subject from the curriculum for training of students to obtain Bachelor's degree, specialty Design and Print Communications, Professional orientation 5.13 Basic Engineering, Field 5. Technical Sciences.]

**AIMS AND OBJECTIVES OF THE COURSE:** [Students gain basic knowledge and skills related to the graphic design of the advertising industry. Acquire skills to perform simple tasks in the field of visual communication, consistent with the basic artistic and aesthetic principles of graphic design. At the end of the training students have the necessary minimum knowledge in the field of graphic design, which will further serve their future realization.]

**DESCRIPTION OF THE COURSE:** [The main topics concern: The main topics: Graphic design - contemporary art for visual communication; Styles and trends in art influenced design; Basic concepts and terms in graphic design; Basic elements and principles of graphic design: line and shape, color, composition, font, typography and calligraphy, illustration, photography; Design thinking; Visual hierarchy; History of graphic signs and symbols; Logo and logodesign; Graphic identity design; Creating a graphic identity guide; Design of printed advertising materials, etc.]

**PREREQUISITES:** [Color Science, Prepress, Graphic Software, Analog and Digital Photography, Font and Typography, Book and book body, Printing technologies, Marketing and advertising.]

**TEACHING METHODS:** [Lectures, using multimedia presentations, laboratory work on main topics with individual practical exercises.]

**METHOD OF ASSESSMENT:** [Written exam – test (1/3), laboratory work (2/3). Course project (CP) is a separate assessment.]

**INSTRUCTION LANGUAGE:** [Bulgarian]

**BIBLIOGRAPHY:** [1.Илиева, С. Графичен дизайн – съвременното изкуство за визуална комуникация, учебно пособие, Издателство КСИ, Пловдив 2015, ISBN 978-954-2942-16-0, 2. Райън, У. и Т. Коновър. Графичната Комуникация Днес, част първа, четвърто издание, София.: Дуо Дизайн, 2008. 368 с., 3. Райън, У. и Т. Коновър. Графичната Комуникация Днес, част втора, четвърто издание, София.: Дуо Дизайн, 2008. 336 с., 4. Станчева, М. Анонимният известен, Пловдив.: Жанет 45, 2007. 192 с., 5. Петрова, З. Дизайн на лого – развитие и съвременни тенденции, автореферат, София.: НХА, 2013. 25 с., 6. Дамянов, Б. Композицията. История и проблематика на понятието в изобразителното изкуство. Пловдив.: ПУ “Паисий Хилендарски”, 1998. 228 с., 7. Паркър, Р. Професионален дизайн в рекламата, София.: Софтпрес, 2008. 280 с., 8. Berger, W. Advertising today, Phaidon, 2001. 512 с., 9. Kozak, G., Wiedemann, J. Package design Now!, София.: Алианс-97, 2008. 414 с., 10. The best of letterhead & logo design, Rockport Publishers, Inc. 2012. 352 с. Web sites: [www.aiga.org](http://www.aiga.org), [www.graphic-design.com](http://www.graphic-design.com), [www.allgraphicdesign.com](http://www.allgraphicdesign.com), [www.goodlogo.com](http://www.goodlogo.com), [www.paul-rand.com](http://www.paul-rand.com), [www.stefankanchev.com](http://www.stefankanchev.com), [www.academyposter.com](http://www.academyposter.com), [www.socmus.com](http://www.socmus.com), [www.posterhouse.org](http://www.posterhouse.org), [www.adc.bg](http://www.adc.bg).]

## DESCRIPTION OF THE COURSE

Name of the course: <b>Marketing and advertising</b>	Code: <b>BpP23</b>	Semester: 7
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 15 hours	Number of credits: 4

### **LECTURER(S):**

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject from the curriculum for training of students to obtain Bachelor's degree, specialty Design and Print Communications, Professional orientation 5.13 General Engineering.

**AIMS AND OBJECTIVES OF THE COURSE:** At the end of the course the students are expected to acquire and deepen their knowledge of basic marketing concepts, principles and tools, as well as advertising as a key element of the communication policy of the organization.

**DESCRIPTION OF THE COURSE:** The course covers the basic marketing concepts and principles, the elements of the marketing environment, market segmentation and positioning. The marketing concepts and the most frequently used marketing strategies in practice are considered. The applicable methods for planning and organizing marketing research, as well as the model of consumer behavior are studied. The marketing tools, expressed through product, pricing, promotion and communication policy, are considered in details. The scope of product policy includes the study of the product and the main product attributes, as well as the concept and strategies for the product life cycle. Attention is paid to innovation and service marketing. The section of pricing policy studies the main methods for pricing and basic pricing strategies. The promotion policy is presented in relation to the distribution channels and the marketing strategies for realization of the product. The communication policy considers the communication mix of advertising and non-advertising means for influencing the market. Detailed attention is paid to the different types of advertising used in different types of media. Digital marketing is also considered with an emphasis on the main technologies used in Internet marketing..

**PREREQUISITES:** Fundamentals of management.

**TEACHING METHODS:** Lectures using presentations, discussions with the active participation of students after preliminary preparation. Seminar exercises - presentation of topics developed by students, according to the educational program and discussion of cases.

**METHOD OF ASSESSMENT:** The method of assessment is through exam.

**INSTRUCTION LANGUAGE:** Bulgarian

### **BIBLIOGRAPHY:**

1. Dimova, N., Marketing aspects of emotional shopping, NBU, 2013
2. Branson, R., Business of the Future, AMG Publishing 2017
3. Kaftandjiev, H., Harmony in Advertising Communication, University Publishing House "St. Kliment Ohridski ", Sofia, 2013
4. Kaftandjiev, H., Mythological Archetypes in Communications, University Publishing House "St. Kliment Ohridski ", Sofia, 2015
5. Krusteva, N., Contemporary marketing, Volume 1, Avangard Prima, Sofia, 2013
6. Krusteva, N., Contemporary marketing, Volume 2, Avangard Prima, Sofia, 2013

7. Holt, D., How brands become icons, Bookmark, Sofia, 2010
8. Klasova, S., Prices in the marketing system, University Publishing House "Economy", 2011
9. Krusteva, N., Customer Relationship Management. Sales, Avangard Prima, 2010
10. Kiberman, T., Rank № 1 in Google 2017, Franchising BG Ltd., 2016
11. Fileva, P., Media Marketing, Sofia University "S. Kliment Ohridski ", 2013
12. Georgieva, E., Kehayova-Stoycheva, M., Stanimirov, E., Marketing, ed. Steno, 2012
13. Levinson, J. Conrad, Guerrilla Marketing, ed. East-West, 2011
14. Marinova, N., International Marketing, NBU, 2017
15. Shterev, N., Marketing-part 1, ed. Martilen, 2016
16. Shterev, N., Marketing-part 2, ed. Martilen, 2010
17. Shaffer, N. The Age of Influencer Marketing, AlexSoft, 2020
18. Kotler, Ph., Marketing 4.0: From the Traditional to the Digital, Locus, 2019
19. Godin, S., This is Marketing, ed. Locus, 2020
20. Mann, I., Marketing without a Budget, AMG Publishing, 2018
21. Indjova, Ts., Marketing Management, NBU, 2012
22. Ryan, D., Digital marketing, 3rd edition, Kogan page limited, 2014
23. Stokes, R., eMarketing, 5th edition, Quirk Education Ltd, 2013
24. Russev, P., Power of the people, The new marketing, eAcademy, 2011
25. Kotler, Ph., Armstrong, G., Principles of Marketing, Pearson Prentice Hall, 2012 .

## DESCRIPTION OF THE COURSE

Name of the course: <b>Measurement and control in the press</b>	Code: <b>BpP24</b>	Semester: <b>7</b>
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 15 hours LW – 30 hours	Number of credits: <b>4</b>

### **LECTURER(S):**

Assoc. Prof. Eng. Raycho Raychev, PhD (FME), tel.: +359 89 5581138, e-mail: [rpraichev@tu-plovdiv.bg](mailto:rpraichev@tu-plovdiv.bg)  
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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory course from the curriculum for training students for Bachelor's degree, specialty "Design and Print Communications", professional field 5.13 General Engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** The discipline is extremely important both in the process of training and in the realization of the graduates of this specialty. Based on the knowledge from the specialized training course, this discipline is a complex of observation, measurement and analysis of quality through process management methods, control and measurement methods and comparative analyzes. Each stage of the control and measurement activities makes it possible to prevent errors deteriorating the quality. In addition to the above, quality measurement and control is the only approach to objective assessment and quality assurance of color reproduction.

**DESCRIPTION OF THE COURSE:** The program of the course includes - types of color synthesis; physical laws of reflection, refraction and absorption of light; light sources, types of measuring instruments (colorimeter, densitometer, spectrophotometer, rotary viscometer, Ph meter with built-in conductometer; Methodology of measurement and types of analysis and processing of results; Statistical analysis and determination of measurement errors; Current standards and norms in the graphics industry;

**PREREQUISITES:** Wave processes, Physical laws of light propagation, Colorimetry, Densitometric and spectrophotometric analysis, Measuring instruments, Control parameters, Color and color generation models.

**TEACHING METHODS:** Lectures using presentations and other visual materials, laboratory exercises with conducting experiments for research and measurement of specific characteristics, protocols with analysis of the conducted experience, seminars in real conditions with the task of control and measurement quality checks and analysis.

**METHOD OF ASSESSMENT:** CA.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** Sardjeva R., Printing Technologies, Siela Soft and Publishing, ISBN 978-954-28-0606-6, 2009, 424 pp.; Sardjeva R., Inks, Printing Materials, Siela Soft and Publishing, ISBN 978-954-28-1383-5, 2013, 260 pp.; Helmut Kipphan, Handbook of PrintMedia, Springer, Germany, 2001; Lapatuhin B. C., Print processes, Kniga, Moskva, 1976; The Handbook for Digital Printing and Variable Data Printing by, Penny K. Bennett, Ph.D. with Harvey Robert Levenson, Ph.D., and Frank J. Romano, PIA/GATFPittsburgh 2007; ECI Guidelines, Guidelines for device-independent color data processing in accordance with the ICC Standard, version 1.1, 05.2000, [www.eci.org](http://www.eci.org); Poprjaduhin P. A., Technologies of printing processes, Kniga, Moskva, 1980; Kozarovitckii, L.A., Paper and Inks in the print processes, Kniga, Moskva 1976; Kolosov AI, Andreev UC and etc., Printing industry technologies, Book, Moscow, 1986; Radev Hr. Et al., Metrology and measuring equipment, S., Softaid, 2008; Hart H. Introduction to Measurement Engineering, S. Engineering, 1982; Dimitrov D., Interchangeability, standardization and technical measurements, S. Tehnika, 1982; Radev Hr., Instruments for measuring linear and angular dimensions, S., Technique 1989, Dimitrov D, etc., Guide for laboratory exercises in Interchangeability and technical measurements. S., Technique, 1989; Yaramov K., R. Yordanov, Guide for solving course problems interchangeability, S., Sofittrade, 2007

## DESCRIPTION OF THE COURSE

Name of the course: <b>3D Modelling</b>	Code: <b>BpP25</b>	Semester: <b>7</b>
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 15 hours LW – 15 hours	Number of credits: <b>3</b>

### **LECTURER(S):**

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Chief Assist. Prof. Eng. Valeri Bakardzhiev PhD, (FME), tel.: +359 32 659 519, e-mail: [bakardzhiev@tu-plovdiv.bg](mailto:bakardzhiev@tu-plovdiv.bg)  
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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject in the curriculum for training students to obtain Bachelor's degree in Design and Print Communications, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences

**AIMS AND OBJECTIVES OF THE COURSE:** The course is aimed at creating 3D models in a specialized software environment. It is practice-based professional learning. 3D modeling gives the opportunity to create models for 3D printing, 3D animations and 3D images. It develops students' practical abilities to think in perspective, to create unique products for the printing industry. It also enables students to learn and excel in creating product ads.

**DESCRIPTION OF THE COURSE:** The main topics concern: types of 3D software, 2D objects – creating and editing, 3D objects – creating and modeling, creating complex objects, image to 3D model, creating materials and textures, rendering.

**PREREQUISITES:** Engineering drawing, graphics software and prepress.

**TEACHING METHODS:** Lectures – using slides and case studies; laboratory work - creating 3D models of different objects.

**METHOD OF ASSESSMENT:** A continuous assessment at the end of the semester (80%), laboratory work (20%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Лекции по дисциплината „3Д моделиране“; 2. Mamgai Pr., Autodesk 3ds Max 2020: A Detailed Guide to Modeling, Texturing, Lighting, and Rendering, 2nd Edition, Independently published, 2019; 3. CADArtifex, Willis J., Dogra S., Autodesk Fusion 360: A Power Guide for Beginners and Intermediate Users (4th Edition), Independently published, 2020 ; 4. Отраслови списания

## DESCRIPTION OF THE COURSE

Course Title <b>(a) Sport</b>	Code: <b>FaSPR07</b>	Semester: <b>7</b>
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Self-Study (SS)	Hours per semester: L – 0 hours S – 0 hours SS – 30 hours	Number of credits: <b>1</b>

### **LECTURERS:**

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**COURSE STATUS IN THE CURRICULUM:** Facultative subject from the curriculum for training of students to obtain Bachelor's degree, specialty „Industrial Engineering“, „Design and Print Communications“, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** Targeted at further developing of students' physical activities, skills and hygiene habits through effective methods of physical education, improving their mental and physical performance.

**COURSE DESCRIPTION:** The knowledge and skills in Physical Education and Sports develop a wide range of motor skills and habits, help the hardening of the body and contribute to the moral development of students. The enhancement of physical skills is carried out through:

1. General Physical Preparedness (GPP) – in these seminars the students develop a wide range of motor skill and habits; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavorable environmental factors; develop their physical qualities and experience.
2. Sports-Specific Physical Preparedness (SPP) – students improve their sport skills and habits in a specific sport and gain experience through participation in competitions; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavorable environmental factors; develop their physical qualities and experience.

**PREREQUISITES:** The curriculum presumes the minimum of knowledge and skills acquired at secondary school.

**TEACHING METHODS:** Seminars in accordance with the curriculum in PE and Sport.

**METHOD OF ASSESSMENT:** Evaluation is based on functional tests at the end of semester. Lecturer's signature is required at the end of semester and “Pass grade”.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Владимиров В. Туризм и ориентиране. Методическо ръководство за студентите от ТУ София, филиал Пловдив. Издателство на ТУ - София. 2010.

## DESCRIPTION OF THE COURSE

Name of the course: <b>Graphic design II</b>	Code: <b>BpP27</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW) Course work (CW)	Hours per semester: L – 20 hours LW –20 hours CW	Number of credits: <b>4</b>

### **LECTURER(S):**

Assoc. Prof. Silvina Ilieva PhD, (FME), tel.: +359 32 659 625, e-mail: [silvina@tu-plovdiv.bg](mailto:silvina@tu-plovdiv.bg)

Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject from the curriculum for training of students to obtain Bachelor's degree, specialty Design and Print Communications, Professional orientation 5.13 Basic Engineering, Field 5. Technical Sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** Students gain knowledge and skills related to the graphic design of the advertising industry. Acquire skills to perform more complex tasks in the field of visual communication and advertising. At the end of the training the students have serious knowledge in the field of graphic design, which will be used for their future realization.

**DESCRIPTION OF THE COURSE:** The main topics: Infographics - an effective method for developing and sharing concepts through visual design; Accompanying advertising materials; Poster design - theatrical (stage) poster, movie poster, propaganda and political poster, social poster, advertising poster; Polish Poster School; Outdoor advertising - main characteristics, types, application; Features in the design of outdoor advertising; Product design; Smart packaging; Trends in packaging design; Cardboard packaging - software for structural and graphic design; Graphic design for web environment; Graphic design for the television and film industries.

**PREREQUISITES:** Color Science, Prepress, Graphic Software, Film (Analogue) and Digital Photography, Font type and Typography, Book Design, Printing Technologies, Marketing and advertising Graphic Design I, Web Design.

**TEACHING METHODS:** Lectures, using multimedia presentations, laboratory work on main topics with individual practical exercises.

**METHOD OF ASSESSMENT:** Written exam – test (1/3), laboratory work (1/3) and course work (1/3).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1.Илиева, С. Графичен дизайн – съвременното изкуство за визуална комуникация, учебно пособие, Издателство КСИ, Пловдив 2015, ISBN 978-954-2942-16-0, 2. Райън, У. и Т. Коновър. Графичната Комуникация Днес, част първа, четвърто издание, София.: Дуо Дизайн, 2008. 368 с., 3. Райън, У. и Т. Коновър. Графичната Комуникация Днес, част втора, четвърто издание, София.: Дуо Дизайн, 2008. 336 с., 4. Станчева, М. Анонимният известен, Пловдив.: Жанет 45, 2007. 192 с., 5. Петрова, З. Дизайн на лого – развитие и съвременни тенденции, автореферат, София.: НХА, 2013. 25 с., 6. Дамянов, Б. Композицията. История и проблематика на понятието в изобразителното изкуство. Пловдив.: ПУ “Паисий Хилендарски”, 1998. 228 с., 7. Паркър, Р. Професионален дизайн в рекламата, София.: Софтпрес, 2008. 280 с., 8. Лолър, Б. Дизайн, предпечат и печат – Официално ръководство на Adobe, София.: Софтпрес, 2006. 188 с., 9. Berger, W. Advertising today, Phaidon, 2001. 512 с., 10. Kozak, G., Wiedemann, J. Package design Now!, София.: Алианс-97, 2008. 414 с., 11. The best of letterhead & logo design, Rockport Publishers, Inc. 2012. 352 с. Web sites: [www.aiga.org](http://www.aiga.org), [www.graphic-design.com](http://www.graphic-design.com), [www.allgraphicdesign.com](http://www.allgraphicdesign.com), [www.goodlogo.com](http://www.goodlogo.com), [www.paul-rand.com](http://www.paul-rand.com), [www.stefankanchev.com](http://www.stefankanchev.com), [www.academyposter.com](http://www.academyposter.com), [www.socmus.com](http://www.socmus.com), [www.posterhouse.org](http://www.posterhouse.org), [www.adc.bg](http://www.adc.bg)

## DESCRIPTION OF THE COURSE

Name of the course: <b>Finishing Processes</b>	Code: <b>BpP28</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 20 hours S – 20 hours	Number of credits: <b>4</b>

### **LECTURER(S):**

Assoc. Prof. Eng. Raycho Raychev, PhD (FME), tel.: +359 89 5581138, e-mail: [rpraichev@tu-plovdiv.bg](mailto:rpraichev@tu-plovdiv.bg)

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject in the curriculum for training students to obtain Bachelor's degree in Design and Print Communications, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences

**AIMS AND OBJECTIVES OF THE COURSE:** The course specializes in technologies of finishing processes in graphic design. It is practice-based professional learning. Finishing processes are an inseparable part of book production in the printing and publishing industry. They are the final phase in the production cycle in the book printing companies. They are divided into two basic processes – brochure and book binding processes.

**DESCRIPTION OF THE COURSE:** The main topics concern: basis terms and definitions, bookbinding materials, one-sided cutting technology, automatic jogging technology, sheet folding technology, deformations, pressing printer's sheets after folding, book assembling technology, technological features of cutting books, stitch book binding and seamless book binding, sheet and book cover elements, types of book covers, paperback to hardcover conversion.

**PREREQUISITES:** Printing systems and printing technologies.

**TEACHING METHODS:** Lectures - using slides and case studies; seminars – students learn how to work with the machines, their advantages and disadvantages.

**METHOD OF ASSESSMENT:** Two written continuous assessments – one during the semester and one at the end of the semester (80%) and seminars (20%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Лекции по дисциплината „Довършителни процеси“; 2. Божкова Т., Техника и технология на довършителните процеси в полиграфията, Брошурни процеси част 1, София, 2009; 3. Бобров В.И., Куликов Г.Б., Одинокова Е.В., Пергамент Д.А., Федосеев А.Ф. Послепечатное оборудование. Учебное пособие - Москва: МГУП, 2000; 4. Хведчин Ю.И. Брошюровочные машины. М.: МГУП, 2003; 5. Отраслови списания

## DESCRIPTION OF THE COURSE

Name of the course: Machines for finishing processes	Code: BpP29	Semester: 8
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 20 hours S – 20 hours	Number of credits: 4

### LECTURER(S):

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Compulsory subject in the curriculum for training students to obtain Bachelor's degree in Design and Print Communications, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences

**AIMS AND OBJECTIVES OF THE COURSE:** „Machines for finishing processes” is a profiling subject related to machines, equipment and lines for finishing processes in the printing industry. It is practice-based professional learning. Students also gain knowledge of construction and the operating principles of different group of machines for finishing processes. The course is focused on the basic modules that these machines are made from, safe systems of work and construction of automated modules and lines that make it realize the whole finishing cycle in any printing company.

**DESCRIPTION OF THE COURSE:** The main topics concern: types of machines for finishing processes, contemporary trends, one-sided cutting machines, automatic jogging machine, sheet folding machines, pressing machines, book assembling machines, three knife trimming machines, book binding machines, casing-in machines in line with joint forming press; hard cover making machines; embossing machines.

**PREREQUISITES:** Printing systems and printing technologies.

**TEACHING METHODS:** Lectures - using slides and case studies; seminars – students learn how to work with the machines, their advantages and disadvantages.

**METHOD OF ASSESSMENT:** Written examination.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Лекции по дисциплината „Машини за довършителни процеси“; 2. Бобров В.И., Куликов Г.Б., Одинокова Е.В., Пергамент Д.А., Федосеев А.Ф. Послепечатное оборудование. Учебное пособие - Москва: МГУП, 2000; 3. Хведчин Ю.И. Брошюровочные машины. М.: МГУП, 2003; 4. Отраслови списания

## DESCRIPTION OF THE COURSE

Name of the course: <b>Hybrid technologies</b>	Code: <b>BpP30.1</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Course work (CW)	Hours per semester: L – 30 hours S – 0 hours LW – 15 hours	Number of credits: <b>4</b>

### **LECTURER(S):**

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**COURSE STATUS IN THE CURRICULUM:** Compulsory course from the curriculum for training students for Bachelor's degree, specialty "Design and Print Communications", professional field 5.13 General Engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** The discipline lays the foundation of printing technology, so you can see all the current conventional and digital printing methods with a character for them - printing form and printing pressure when transferring ink or digital workflow, realized through NIP transmissions, successfully integrated into modern hybrid technologies. After successfully passing the training course, students give the required knowledge in the technological characteristics and processes of each technology in different technological variants of combination, respectively available opportunities and application in the graphics industry. Hybrid technologies are a development that satisfies the need to take advantage of different technologies and competitiveness in the rapid cyclical changes in the industry and the ever-increasing customer requirements..

**DESCRIPTION OF THE COURSE:** The program of the course includes structure, composition and production of printed forms; physico-chemistry of the printing process; processes and interactions in the press, technological and technical parameters of each of the technologies. The study of technologies and technological processes is a prerequisite and opportunity for engineering and technological analysis of opportunities for application, integration, development and management of production and technological processes with achieving high quality and cost-effective results. Based on the disciplines Printing Technologies - first and second part, students build a professional approach to the use of hybrid technologies. The different combinations open a wide horizon and a field of expression for different printed products.

**PREREQUISITES:** Disperse systems, Physico-chemical processes in printing, Fluid mechanics, Colorimetry, Behavior of materials, Elastic and plastic deformations, Wetting angle, Electrostatic interactions, Chemical interactions, Adhesion and cohesion. Conventional and Digital printing technologies

**TEACHING METHODS:** Lectures using presentations and other visual materials, laboratory exercises with conducting experiments for research and measurement of specific characteristics, protocols with analysis of the conducted experience, seminars in real conditions with a given technological problem for analysis and solution.

**METHOD OF ASSESSMENT:** Exam.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Sardjeva R., Printing Technologies, Siela Soft and Publishing, ISBN 978-954-28-0606-6, 2009, 424 pp.; 2. Sardjeva R., Inks, Printing Materials, Siela Soft and

Publishing, ISBN 978-954-28-1383-5, 2013, 260 pp.; Helmut Kipphan, Handbook of PrintMedia, Springer,Germany, 2001; 4. Lapatuhin B. C., Print processes, Kniga, Moskva, 1976; 5. The Handbook for Digital Printing and Variable\_Data Printingby, Penny K. Bennett, Ph.D. with Harvey Robert Levenson, Ph.D., and Frank J. Romano, PIA/GATFPressPittsburgh 2007; 6. ECI Guidelines, Guidelines for device-independent color data processing in accordance with the ICC Standard, version 1.1, 05.2000, [www.eci.org](http://www.eci.org); 7. Poprjaduhin P. A., Technologies of printing processes, Kniga, Moskva, 1980; 8. Kozarovitckii, L.A., Paper and Inks in the print processes, Kniga, Moskva 1976; 9. Kolosov A. I., Andreev U.C. and etc., Printing industry technologies, Kniga, Moskva,1986.

## DESCRIPTION OF THE COURSE

Name of the course: <b>Production of book publishing</b>	Code: <b>BpP30.2</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S))	Hours per semester: L – 20 hours S – 10 hours LW – 10 hours	Number of credits: <b>4</b>

### LECTURER(S):

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Elective course from the curriculum for training students for Bachelor's degree, specialty "Design and Print Communications", professional development 5.13 General engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** All stages of the production of book publishing are successfully segmented in this discipline, including PrePress, Press, Post Press processes. In this way, even during their studies, students acquire the skills to develop technological plans for production needs. Using knowledge from disciplines in prepress, technology, finishing processes, students develop a project taking into account the requirements of each of the stages of production.

**DESCRIPTION OF THE COURSE:** The program of the course includes all the main most commonly used types and formats of book production, the corresponding diversity includes a variety of high quality scientific encyclopedias to promotional newspaper products. This wide range of products also implies a variety of approaches in the development of a technological plan. The comprehensiveness of this discipline enables the student to develop the potential of knowledge and direct it to practical applicability.

**PREREQUISITES:** Book publishing / printing segment; The need for a copying process of artistic, scientific, educational and journalistic activity and longevity of the book as a product carrying information. Along with the listed needs, the segment for the production of this type of production has been developing over the years, this is undoubtedly related to technological development provided by technical means (machines) for a specialized production process.

**TEACHING METHODS:** Lectures using presentations and other visual materials, seminars in real conditions with a given technological problem for analysis and solution, development of production planning with individual assignments.

**METHOD OF ASSESSMENT:** Exam.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** Sardjeva R., Printing Technologies, Siela Soft and Publishing, ISBN 978-954-28-0606-6, 2009, 424 pp.; Sardjeva R., Inks, Printing Materials, Siela Soft and Publishing, ISBN 978-954-28-1383-5, 2013, 260 pp.; Helmut Kipphan, Handbook of PrintMedia, Springer, Germany, 2001; Lapatuhin B. C., Print processes, Kniga, Moskva, 1976; The Handbook for Digital Printing and Variable Data Printingby, Penny K. Bennett, Ph.D. with Harvey Robert Levenson, Ph.D., and Frank J. Romano, PIA/GATFPittsburgh 2007; ECI Guidelines, Guidelines for device-independent color data processing in accordance with the ICC Standard, version 1.1, 05.2000, [www.eci.org](http://www.eci.org); Poprjaduhin P. A., Technologies of printing processes, Kniga, Moskva, 1980; Kozarovitkii, L.A., Paper and Inks in the print processes, Kniga, Moskva 1976; Kolosov A. I., Andreev U.C. and etc., Printing industry technologies, Kniga, Moskva, 1986; Бобров В.И., Куликов Г.Б., Одинокова Е.В., Пергамент Д.А., Федосеев А.Ф. Послепечатное оборудование. Учебное пособие - Москва: МГУП, 2000.- 132 с. ISBN 5-8122-0175-7. Тираж: 3000 экз., Хведчин Ю.И. Брошуровочные машины. М.: МГУП, 2003, Д.А.Пергамент ОБОРУДОВАНИЕ ДЛЯ ПОСЛЕПЕЧАТНЫХ ПРОЦЕССОВ. Лабораторные работы М.: МГУП, 2002., Воробьев Д.В. Технология послепечатных процессов. М. МГУП, 2000 г., Воробьев Д., "Брошуровочно-переплетные процеси", м. книга, 1979 г., Виткова К., Кузнецова А., "Брошуровочно-переплетное производство", м. книга 1980., Диневков З. и др., Технология на брошуро-книговезките процеси, С. Техника, 1981 г., Технология брошуровочно-переплетных процессов. Лабораторные работы. М., 2000.

## DESCRIPTION OF THE COURSE

Name of the course: <b>Computer graphics</b>	Code: <b>BpP31.1</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 20 hours LW – 20 hours	Number of credits: <b>4</b>

### **LECTURER(S):**

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Elective course from the curriculum for students studying for the Bachelor's degree in Design and Print Communications, professional field 5.13 General Engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** The aim of the course is to create knowledge about the mathematics and basic methods and means used in raster and vector graphics, and to create practical skills in application of standard program libraries, as well as to introduce students to the basics of motion design and software.

**DESCRIPTION OF THE COURSE:** The main topics concern: Raster graphics, image presentation, formats color models, methods of rendering; Curves description; Projective geometry and geometrical space transformations. 2D and 3D description of graphical objects: wire models, solid block models, structure models, textured models. Lightening and coloring of computer-generated objects in images. Application of Adobe After Effects in motion design.

**PREREQUISITES:** Good knowledge in: Mathematics I, Graphic software I and II.

**TEACHING METHODS:** Lectures using slides and multimedia presentations; laboratory exercises that introduce students to the practical work with Adobe After Effects for creating motion designs, as well as working with image libraries.

**METHOD OF ASSESSMENT:** Exam during the regular session (50%) laboratory work (50%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Pavlova P. „Basics of Computer Graphics - textbook“, pub. TU Sofia, 2016. 2. Pavlova P. „Manual for Laboratory Exercises in Fundamentals of Computer Graphics“, pub. TU Sofia, 2016. 3. Foley J., A. van Dam, St. Feiner, J. Hughes. Computer Graphics Principles and practice, Second edition, Addison-Wesley Pub. 1990. 4. Aleksandrov A., Koralski A., Binev B.. 3D ray tracing & animation. AlexSoft.Sofia 1995. 5. Editor Nobuhiko Mukai, Computer Graphics, 2012 – open access book 6. Hughes J., A. van Dam M.McGuire, D. F. Sklar, J. Foley, St. Feiner, K. Akeley. Computer Graphics: Principles and Practice, 3rd edition, 2013 – e-book. 7. Pratt M., G. Humphreys. Physically based rendering – From theory to implementation Second edition, Morgan Kaufmann, 2010.

8. [http://www.geometryalgorithms.com/Archive/algorithm\\_0108/algorithm\\_0108.htm](http://www.geometryalgorithms.com/Archive/algorithm_0108/algorithm_0108.htm)

9. <http://www.siggraph.org/education/materials/HyperGraph/raytrace/rtinter0.htm>

10. [https://www.courses.psu.edu/art/art201\\_jxm22/tutorials.html](https://www.courses.psu.edu/art/art201_jxm22/tutorials.html)

## DESCRIPTION OF THE COURSE

Name of the course: <b>Computer fonts</b>	Code: <b>BpP31.2</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 20 hours LW – 20 hours	Number of credits: <b>4</b>

### LECTURER(S):

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Technical University of Sofia, Plovdiv Branch

**COURSE STATUS IN THE CURRICULUM:** Elective course from the curriculum for training students for Bachelor's degree, specialty "Design and Print Communications", professional development 5.13 General engineering, field 5. Technical sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** After completing the course students must know the functional characteristics of modern font formats TTF, OTF, WOFF, WOFF2, to understand and orient themselves in the standard for UNICODE fonts, to have knowledge of the Bézier curve (basic graphic component in computer fonts), know the basic programs aimed at computer fonts (font managers, font editors) and be able to work with the programs FontForge (free font editor), Inkscape (free vector editor), Nexus (free font manager). Students should be able to build grapheme objects in vector format, save these grapheme objects as SVG files, be able to insert SVG files into the FontForge program and generate the corresponding grapheme in the font editor.

**DESCRIPTION OF THE COURSE:** Main topics: Basic modern font formats - TTF, OTF, WOFF, WOFF2, and the difference between them; The UNICODE font standard and its significance for the development of computer fonts; Font managers and their role in viewing and managing computer fonts; Vector programs for working with fonts - Inkscape and Illustrator. Font editing software - FontForge, Trufont, FontLab; creating graphemes in SVG format using Inkscape; Insert a grapheme image in SVG format in FontForge; Basic information characteristics of the computer font; Horizontal and vertical metrics in computer font; Balance between the components that make up the graphemes; OpenType tables and functionalities - GSUB and GPOS; Construction of ligatures and curning; Generate font in OTF, TTF and UFO format.

**PREREQUISITES:** Font and Typography, Graphic Software, Graphic Design.

**TEACHING METHODS:** Lectures using multimedia presentations and demo programs, laboratory exercises with individual practical tasks and defense.

**METHOD OF ASSESSMENT:** Written exam (20%), assessment of the individual tasks of the exercises and their defense (80%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. McNeil P, *The Visual History of Type*, 2017, 672p., 2. Bringhurst R., *The Elements of Typographic Style*, 2013, 382p., Coles S., 3. *The Anatomy of Type*, 2012, 256p., 4. Blackwell L., *Twentieth-Century Type*, 2004, 216p., 5. Йончев, В. *Шрифътът през вековете*, София.: Български художник, 1971. 410, 6. Йончев, В., Йончева О., *Древен и съвременен български шрифт*. – София: Български художник, 1982. 7. Кирилицата и глаголицата. – София: Кирил Гогов и синове, 1997. <https://fontforge.org/>, <https://www.fontlab.com>, <https://www.fontfabric.com/p> <http://www.balezdrov.comp> <https://localfonts.eup> <http://www.hermessoft.com>, <https://www.calligraphr.com>

## DESCRIPTION OF THE COURSE

Course Title <b>(b) Sport</b>	Code: <b>FaSPR08</b>	Semester: <b>8</b>
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Self-Study (SS)	Hours per semester: L – 0 hours S – 0 hours SS – 30 hours	Number of credits: <b>1</b>

### **LECTURERS:**

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**COURSE STATUS IN THE CURRICULUM:** Facultative subject from the curriculum for training of students to obtain Bachelor's degree, specialty „Industrial Engineering“, „Design and Print Communications“, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences.

**AIMS AND OBJECTIVES OF THE COURSE:** Targeted at further developing of students' physical activities, skills and hygiene habits through effective methods of physical education, improving their mental and physical performance.

**COURSE DESCRIPTION:** The knowledge and skills in Physical Education and Sports develop a wide range of motor skills and habits, help the hardening of the body and contribute to the moral development of students. The enhancement of physical skills is carried out through:

3. General Physical Preparedness (GPP) – in these seminars the students develop a wide range of motor skill and habits; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavorable environmental factors; develop their physical qualities and experience.
4. Sports-Specific Physical Preparedness (SPP) – students improve their sport skills and habits in a specific sport and gain experience through participation in competitions; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavorable environmental factors; develop their physical qualities and experience.

**PREREQUISITES:** The curriculum presumes the minimum of knowledge and skills acquired at secondary school.

**TEACHING METHODS:** Seminars in accordance with the curriculum in PE and Sport.

**METHOD OF ASSESSMENT:** Evaluation is based on functional tests at the end of semester. Lecturer's signature is required at the end of semester and “Pass grade”.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** 1. Владимиров В. Туризм и ориентиране. Методическо ръководство за студентите от ТУ София, филиал Пловдив. Издателство на ТУ - София. 2010.