



**ACCESSIBILITY AND HARMONIZATION OF HIGHER  
EDUCATION IN CENTRAL ASIA THROUGH CURRICULUM  
MODERNIZATION AND DEVELOPMENT**

**Project № 561553-EPP-1-2015-1-BG-EPPKA2-CBHE-JP**

**ERASMUS+ Programme  
KA2 - Capacity-building in the Field of Higher Education**

**Coordinated by Burgas Free University**

**WP1 Research  
Dev. 1.1  
App. 8.1 Institutional Report  
BFU, Bulgaria**



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|   |   |
|---|---|
| Elaborated by                                   | P1 – BFU (BG)   |
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| Language  | English   |

**INSTITUTIONAL SUMMARY REPORT – P1 BFU, BULGARIA**

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**A. General Information**

**COUNTRY:** BULGARIA

**INSTITUTION:** BURGAS FREE UNIVERSITY (BFU)

**ADDRESS:** 62 San Stefano St., 8000 Burgas, Bulgaria

**FACULTIES:**

1. Faculty of Computer Science and Engineering
2. Faculty of Business Studies
3. Faculty of Legal Studies
4. Faculty of Humanities

**RELATED ACADEMIC UNITS:**

Centre for Distance Education, Technology Transfer Office, Laboratory for Psychological and Social Research, Laboratory for Psychological Support and Development, Law Clinic, CISCO Academy, Robotics and Programming Academy, Student Centre for Career Development, UNESCO Chair on Culture of Peace and Human Rights

**B. Information related to Engineering and Engineering Trade Subject Area**

**I. Academic Programs in Engineering and Engineering Trade Subject Area**

Please, specify only Bachelor's and/or Master's Degree Programs which the university is expected to provide education in over the period of the Project (the next three academic years: 2015-18)<sup>1</sup>, with indication of the Area (see table) where the academic program should be considered.

|                   |  |
|-------------------|--|
| Engineering       | <b>Area 1</b><br>(covers all types of classical Engineering degrees including electrical, mechanical, electronic, agricultural, aerospace, civil, mine, telecommunication, computer, etc.) |
| Engineering Trade | <b>Area 2</b><br>(covers all types of general industrial Engineering degrees including design,   |

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<sup>1</sup>If the university does not offer academic programs in Engineering and Engineering Trade subject area, please, in Table 1 fill in academic programs whose program's curriculum includes courses/subjects related to Engineering Sciences.

|  |   |
|--|---|
|  | <b>logistics, management, business, etc.)</b> |
|--|---|

**Table 1. Description of Academic Programs in the field of Engineering and Engineering Trade**

| Area   | Name of the Academic Program                                    | Educational degree provided (Bachelor, Master) | Form of study (part-time, full-time, distant education) | Approximate total number of students | Total number of academic staff |
|--------|---|--|---|--------------------------------------|--------------------------------|
| Area 1 | Software Engineering  | B, M   | Part-time<br>full-time                                  | 66                                   | 20                             |
| Area 1 | Communications and Electronization for Renewable Energy Sources | B, M   | Part-time<br>full-time                                  | 81                                   | 20                             |
| Area 1 | Computer Systems and Technology                                 | B  | Part-time<br>full-time                                  | 92                                   | 20                             |
| Area 1 | Informatics and Computer Science                                | B,   | Part-time<br>Full-time                                  | 38                                   | 20                             |
| Area 1 | Electric Energy Distribution and Electrical Equipment           | B, M   | Part-time<br>full-time                                  | 60                                   | 19                             |
| Area 1 | Engineering and Exploitation of Energetic Systems               | M  | Part-time   | 24                                   | 19                             |
| Area 2 | Traffic Accident Investigation and Traffic Safety Management    | M  | Part-time   | 19                                   | 18                             |
| Area 2 | Safety Management and Electrical Auditing                       | M  | Part-time   | 19                                   | 18                             |

## II. Current State of Education

Please, provide the following information for your university.

### II.1. Quality of the Program's Curriculum and the Teaching Programs. Provide the information for each general type of Bachelor Degree and Master Degree.

a) The indicators in this section refer to the Program's Curriculum. They aim to assess the consistency of the academic program with the requirements of the European higher education (please write down just the total length and the number of ECTS of each type).

Share of core (required), Compulsory Specialized subjects, specialized subjects, common and optional subjects, and elective courses included in the Program's curriculum. In the following table:

- **Type:** may refer to (bachelor/master/professional bachelor/academic bachelor, and similar categories in case you have such types of degrees at your university)
- **Area:** may refer to Area 1 or Area 2 as defined in B.1

| Table 2. Number of ECTS within each TYPE/AREA | SUBJECT TYPE                        | NUMBER OF ECTS |
|---|-------------------------------------|----------------|
| Area 1/Bachelor/Software Engineering          | BASIC COMPULSORY                    | 120            |
|   | CORE or COMPULSORY SPECIALIZED      | 85             |
|   | SPECIALIZED or RELATED              | 7              |
|   | OPTIONAL OR ELECTIVE                | 15             |
|   | Internship or training activities   | 3              |
|   | Final project or final dissertation | 10             |

|  |   |     |
|--|---|-----|
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 240 |
|--|---|-----|

| <b>TYPE/AREA</b>   | <b>SUBJECT TYPE</b>                       | <b>NUMBER OF ECTS</b> |
|--|---|-----------------------|
| Area 1/Bachelor/<br>Communications and<br>Electronization for<br>Renewable energy<br>Sources | BASIC COMPULSORY                          | 115                   |
|  | CORE or COMPULSORY SPECIALIZED            | 68                    |
|  | SPECIALIZED or RELATED                    | 33                    |
|  | OPTIONAL OR ELECTIVE                      | 9                     |
|  | Internship or training activities         | 5                     |
|  | Final project or final dissertation       | 10                    |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 240                   |

| <b>TYPE/AREA</b>                                       | <b>SUBJECT TYPE</b>                       | <b>NUMBER OF ECTS</b> |
|--|---|-----------------------|
| Area 1/Bachelor/<br>Computer Systems and<br>Technology | BASIC COMPULSORY                          | 111                   |
|  | CORE or COMPULSORY SPECIALIZED            | 79                    |
|  | SPECIALIZED or RELATED                    | 24                    |
|  | OPTIONAL OR ELECTIVE                      | 18                    |
|  | Internship or training activities         | 8                     |
|  | Final project or final dissertation       | 10                    |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 240                   |

| <b>TYPE/AREA</b>  | <b>SUBJECT TYPE</b>                       | <b>NUMBER OF ECTS</b> |
|---|---|-----------------------|
| Area 1/Bachelor/<br>Informatics and Computer<br>Science | BASIC COMPULSORY                          | 103                   |
|   | CORE or COMPULSORY SPECIALIZED            | 97                    |
|   | SPECIALIZED or RELATED                    | 10                    |
|   | OPTIONAL OR ELECTIVE                      | 20                    |
|   | Internship or training activities         | 0                     |
|   | Final project or final dissertation       | 10                    |
|   | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 240                   |

| <b>TYPE/AREA</b>   | <b>SUBJECT TYPE</b>                       | <b>NUMBER OF ECTS</b> |
|--|---|-----------------------|
| Area 1/Bachelor/ Electric<br>Energy Distribution and<br>Electrical Equipment | BASIC COMPULSORY                          | 112                   |
|  | CORE or COMPULSORY SPECIALIZED            | 69                    |
|  | SPECIALIZED or RELATED                    | 27                    |
|  | OPTIONAL OR ELECTIVE                      | 17                    |
|  | Internship or training activities         | 5                     |
|  | Final project or final dissertation       | 10                    |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 240                   |

| <b>TYPE/AREA</b>                      | <b>SUBJECT TYPE</b>                       | <b>NUMBER OF ECTS</b> |
|---------------------------------------|---|-----------------------|
| Area 1/Master/Software<br>Engineering | BASIC COMPULSORY                          | 20                    |
|                                       | CORE or COMPULSORY SPECIALIZED            | 26                    |
|                                       | SPECIALIZED or RELATED                    | 14                    |
|                                       | OPTIONAL OR ELECTIVE                      | 0                     |
|                                       | Internship or training activities         | 0                     |
|                                       | Final project or final dissertation       | 15                    |
|                                       | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | 75                    |

| <b>TYPE/AREA</b>                     | <b>SUBJECT TYPE</b>            | <b>NUMBER OF ECTS</b> |
|--------------------------------------|--------------------------------|-----------------------|
| Area 1/Master/<br>Communications and | BASIC COMPULSORY               | 20                    |
|                                      | CORE or COMPULSORY SPECIALIZED | 24                    |

|  |   |           |
|--|---|-----------|
| Electronization for Renewable Energy Sources | SPECIALIZED or RELATED                    | 16        |
|  | OPTIONAL OR ELECTIVE                      | 0         |
|  | Internship or training activities         | 0         |
|  | Final project or final dissertation       | 15        |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | <b>75</b> |

| TYPE/AREA  | SUBJECT TYPE                              | NUMBER OF ECTS |
|--|---|----------------|
| Area 1/Master/ Electric Energy Distribution and Electrical Equipment | BASIC COMPULSORY                          | 12             |
|  | CORE or COMPULSORY SPECIALIZED            | 24             |
|  | SPECIALIZED or RELATED                    | 12             |
|  | OPTIONAL OR ELECTIVE                      | 12             |
|  | Internship or training activities         | 0              |
|  | Final project or final dissertation       | 15             |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | <b>75</b>      |

| TYPE/AREA  | SUBJECT TYPE                              | NUMBER OF ECTS |
|--|---|----------------|
| Area 1/Master/ Engineering and Exploitation of Energetic Systems | BASIC COMPULSORY                          | 19             |
|  | CORE or COMPULSORY SPECIALIZED            | 25             |
|  | SPECIALIZED or RELATED                    | 16             |
|  | OPTIONAL OR ELECTIVE                      | 0              |
|  | Internship or training activities         | 0              |
|  | Final project or final dissertation       | 15             |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | <b>75</b>      |

| TYPE/AREA   | SUBJECT TYPE                              | NUMBER OF ECTS |
|---|---|----------------|
| Area 2/Master/ Traffic Accident Investigation and Traffic Safety Management | BASIC COMPULSORY                          | 33             |
|   | CORE or COMPULSORY SPECIALIZED            | 18             |
|   | SPECIALIZED or RELATED                    | 9              |
|   | OPTIONAL OR ELECTIVE                      | 0              |
|   | Internship or training activities         | 0              |
|   | Final project or final dissertation       | 15             |
|   | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | <b>75</b>      |

| TYPE/AREA  | SUBJECT TYPE                              | NUMBER OF ECTS |
|--|---|----------------|
| Area 2/Master/ Safety Management and Electrical Auditing | BASIC COMPULSORY                          | 33             |
|  | CORE or COMPULSORY SPECIALIZED            | 19             |
|  | SPECIALIZED or RELATED                    | 8              |
|  | OPTIONAL OR ELECTIVE                      | 0              |
|  | Internship or training activities         | 0              |
|  | Final project or final dissertation       | 15             |
|  | <b>TOTAL PER TYPE OF DEGREE OR MASTER</b> | <b>75</b>      |

b. Do you collect information on Program's curriculum, teaching programs, learning materials related to similar academic programs at European higher academic institutions (HEIs)?

Please, provide information about the ways to collect such data and give specific examples.

[The Faculty of Computer Science and Engineering](#) aims at providing modern education in conformity with the standards and current tendencies in the European higher education in the field of Engineering and Engineering trade. The following main channels are used for collecting information on curriculum related to similar academic programs:

1). Visits of the academic staff abroad under various international joint programs such as Erasmus+, Financial Mechanism of the European Economic Area, etc. Upon its return, each teacher is required to present a Report containing information about the partner institution specifically the organization of the educational process, methods of teaching, program curricula as well as the syllabus of the subjects taught. 19 reports for 40 courses have been submitted over the period 2010-2015.

2) The Faculty maintains a database with study documentation of leading HEIs in Bulgarian and abroad. The data show that on average 3/4<sup>th</sup> (75%) the subjects in the Program curricula are content compatible with those at the leading universities. Only 1/4<sup>th</sup> of the subject differ significantly due to specific characteristics of Bulgaria's higher education.

c. Share of the teaching staff with a doctoral degree/PhD (% of the full-time academic staff providing education at university or Faculty level) (average)

80% of the teaching staff holds a PhD degree

d. Policy toward usage of modern approaches and methods of teaching

Please, give evidence on the usage of modern approaches and methods of teaching. Describe the policy for upgrading academic staff qualification. Mention specific actions taken such as seminars, workshops, training courses, etc. which aim to raise teachers' awareness of contemporary methods in higher education.

The Faculty encourages the use of modern approaches and methods of teaching. Recently, an emphasis has been placed on the interactive forms of education which might be summarized as follows:

- **Interactive multimedia products using specific software:** CodeBlocks 12.11, Dev C++ 5.4, Easy PHP 12, Eclipse, Apachetomcat-7.0.37 JCreator, Eclipse, MSVisual Studio 2012, MSSQLServer 2012, Adobe Design Premium CS3, Macromedia Director MX 2004, MSOffice 2007, MSProject professional 2013, MSO FrontPage 2003, etc.;

- **Innovative methods:** individual or team project work; case studies; visualization, surveying; students' scientific session; discussion club; "student teaching" –(студенти представят своя разработка по даден проблем и другите я коментират и оценяват), game based education, problem based learning;

- **E-learning:** it is designed to support the classroom activities as well as to activate the out-of-class student engagement.

Eighty nine percent (89%) of the subjects use multimedia products, more than 50% of the subjects use specialized labs/computer halls as well as specialized software products; more than 3/4<sup>th</sup> of the courses in the area of Engineering Studies have uploaded related content in the university's Moodle platform. Over the period 2013-2014 under the project BG051PO001-3.1.07 „Curriculum update in higher education in accordance with the labor market requirements” financed by the EU the content as well as the teaching approaches of 34 teaching programs in the field of Engineering Studies were modernized.

The Faculty strictly adheres to the university's policy for continual improvement of the academic staff's qualification. The main actions taken include:

1). Discussions and roundtables: These are usually organized in parallel with other scientific events hosted by BFU. They join university professors from Bulgarian and abroad, employers and employers' organizations. Recent examples include the following roundtables: "Challenges to higher education and scientific research during crisis time" (2010); "Interaction between theory and practice: key problems and solutions" (2011); "Knowledge – traditions, innovations, perspectives" (2013).

2). Weekend seminars on the issues related to contemporary teaching approaches. Such non-formal meetings of the Faculty's staff in the countryside are held usually once per year.

3). Training courses for upgrading teachers' qualification. Over the period 2013-2014 various training courses were carried out within the project № BG051PO001-3.1.09-0007 „Development of a system for career advance of the university teachers at BFU as well as a system for improvement and upgrade of their qualification". The primary purpose was to enhance the qualification of the teaching staff in areas

such as e-learning approaches, online teaching methods, foreign language learning, and lifelong learning.

e. Existence of a Quality Assurance System at National level or International QAS followed. Please explain QAS, if any, to recognize degrees nationwide and follow up system, if any, to reaccredit degrees after being implemented for a given number of years.

#### QAS at a National Level

Each Higher Educational Institution in Bulgaria is subject to accreditation by the National Evaluation and Accreditation Agency under the Council of Ministers. It is the specialised state authority vested with the assessment, accreditation and quality control. It monitors the ability of HEIs, their main units and branches to provide good quality of education and scientific research through an internal quality assurance system.

The National Agency for Assessment and Accreditation is responsible for post-accreditation monitoring and supervision of:

1. the capacity of the institution and its primary units and affiliates to ensure high quality of education and research through an internal system for quality assessment and assurance;
2. the fulfillment of the recommendations given in the course of the assessment and accreditation;
3. the observance of the capacity of the higher school and the capacity of professional areas and specialties of regulated professions.

The Agency granted both institutional and program accreditation. Its duration depends on the score on a 10-point scale as follows:

- six years for scores between 9.00 and 10.00;
- five years - for scores between 7.00 and 8.99;
- four years - for scores between 5.00 and 6.99;
- three years – for scores between 4.00 and 4.99.

Accreditation is denied if the score is between 0 and 3.99.

Institutional accreditation is also denied when the score obtained during the institutional accreditation procedure is between 0 and 3.99 for one or more of the following criteria:

1. the internal system for assessment and assurance of the quality of education;
2. the profile and qualifications of the faculty;
3. the available facilities for the purposes of education.

The outcome of programme assessment and accreditation is considered negative in professional areas which have scored less than 4.00 for one or more of the following criteria:

1. teaching documentation and tuition in the professional area or specialty related to regulated professions;
2. the profile and qualifications of the faculty from the relevant professional area or specialty related to regulated professions;
3. the availability of specialised facilities, equipment and databases necessary for instruction in the relevant professional area or specialty related to regulated professions.

Higher schools with programme accreditation scores of 4.00 to 4.99 are only allowed to offer instruction for the degree of Bachelor in the relevant professional area or specialty related to regulated professions. If its programme accreditation score is between 5.00 and 10.00, a higher school shall be allowed to offer instruction and confer the degrees of Bachelor and Master. Higher schools and organisations could provide training in doctoral programmes if scored between 8.00 and 10.00 points in the programme accreditation exercise.

The University is accredited by the National Evaluation and Accreditation Agency. It is certified according to the quality standards of the International Organization for Standardization /ISO/. In 2005 BFU was certified under ISO 9001:2000 and in 2010 - under ISO 9001:2008. All the University's main activities have been certified, as well as its degree programmes: education of students in Bachelor, Master and



PhD programmes, qualification, research and international relations activities. It is also a member of the European Universities Association /EUA/, the Association of Private Higher Schools in Bulgaria.

### QAS at a University Level

A Quality Assurance System operates at a university level. Its activity is regulated by Regulations of Quality Assurance System of Burgas Free University which is built upon the Law of Higher Education in Bulgaria and International Quality Standard EN ISO 9001:2008. The System is designed to establish, sustain and control the quality of the study process as well as the academic staff.

f. Share of new courses (subjects) which have been introduced in the Program's curricula for the last 3 years (% of the total number of courses/subjects in the Program's curriculum)

The new courses have been introduced over the last three years accounts for approximately 10% of all courses taught in the programs related to Engineering Studies.

g. Usage of contemporary references or bibliography recommended to students

Please, specify the approximate average number per University/Faculty/Department according with the data used at your university, specify which one.

**Table 3. Bibliography/references**

| Share of core readings (references) issued over the last five (0-5) years (% of the total number of core readings) | Share of core readings (references) issued over the last ten (0 - 10) years (% of the total number of core readings) | Share of the digital references in e-format (% of the total number of references) |
|--|--|---|
| 52%  | 90%  | 40%   |

## **II.2. ICT facilities and ICT based education**

**II.2. a.** This section aims to shed light on the usage of ICT-based facilities and teaching methods as well as the digital competencies of the teaching staff.

**Table 4. ICT facilities**

| Indicator   | Value  |
|---|--|
| <b>Teaching e-platform accessible to support general teaching activities</b>          | YES  |
| <b>On-line platform for non-presential education courses</b>                          | YES  |
| <b>ICT lab facilities for students and percentage of students that access to them</b> | Yes – 100% in the Engineering Programs   |
| <b>Number of software products used for educational purposes</b>                      | approx. 25<br>CodeBlocks, Dev C++, Easy PHP, Eclipse, Apache-tomcat, JCreator, MSVisual Studio, MSOffice, MSProject professional; MSSQLServer, |

|  |   |
|--|---|
|  | CorelDraw Graphics, Adobe products, SolidEdge, AutoCad,, Web based simulation systems.  |
| <b>Access to Wi-Fi at the university campus</b>  | YES   |
| <b>Average share of academic hours per course/subject requiring usage of ICT- based teaching methods (i.e. computers and software, multimedia devices)</b> | 89%   |
| <b>Average share of academic hours per course/subject held in a computer lab</b>   | 50%   |
| <b>Average share of the teaching staff who regularly use ICT-based methods of teaching</b>   | 100%<br>Mainly multimedia and Moodle platform.  |
| <b>Type of e-learning devices used by teaching staff (i.e. personal computer, smartphones, tablets, etc.)</b>  | Mainly personal computers   |
| <b>Devices used by students in classrooms (type of personal devices: i.e. laptop, smartphones, tablets, etc.)</b>  | Personal computers, laptops, smartphones  |
| <b>E-learning materials (e-based content) based on e-platform (i.e. Moodle, Sakai, Caroline, etc.)</b>   | Moodle platform   |
| <b>Web based learning-MOOCs</b>  | NO  |
| <b>Students evaluation methods</b>   | paper written multiple-choice tests; open-ended questions; presentations, case studies, problem solving; portfolio; online test; traditional face-to-face; oral examination |
| <b>Other non-traditional evaluation methods for transversal competences</b>  | self-assessment with online test, quizzes, course works, project preparation and defense  |

### III Digital Framework

1. Is your university following a strategic plan for Digital implementation? YES/NO. Describe it in max 700 words.

In accord with the tendencies in Bulgarian higher education, BFU is enhancing and improving the usage of digital approaches, methods and tools in the educational process. Two years ago, it established a [Centrum for Distance Education](#) as part of the Project “University Center for Distance Education – an opportunity for Lifelong Learning” financed by the European Operational Program “Human Resource Development”. It organizes distance learning courses for Master’s programmes as well as short-term online courses for continuing education. It provides innovative and efficient distance education based on the modern Information and Communication Technologies, consults students and lecturers to work on such courses and develops standards for distance learning courses and programmes, as well as

provides monitoring on their implementation. The distance education provided by BFU is an Internet-based electronic education. Three out of four faculties have developed master's degree programs for distance learning. The latter is regulated by Regulations for Distance Learning Education at BFU. All faculties and programs deliver e-content through Moodle platform for e-learning. The main directions and tasks for future work regarding digital learning are: 1). to extend the courses for life-long learning offered online; 2). to increase the number of distant learning master programs as well as to provide bachelor programs for distance learning; 3). to enhance the usage of digital approaches and methods of teaching.

2. Describe how your university develops its Digital Strategy in terms of Concerns and Key Actions during the last 2 years (i.e. training courses, sessions, workshops, financial assistance offered to academics for qualification upgrading, etc.):

**Table 5. Digital Framework**

|  | <b>CONCERNS</b>   | <b>KEY ACTIONS</b>   |
|--|---|--|
| <b>Technology use by faculties, schools and University Services units CSUs of plans for technology use</b>                             | Motivation of the academic staff to use actively ICT facilities, services and devices                   | in-service training, workshops, financial assistance within EU funded projects   |
| <b>Student experience and support in ICT use</b>   | Ability and motivation of students to use actively the e-learning system                                | seminars, workshops, online tutorials  |
| <b>Administrative Staff training and support in ICT use to improve the digital competence</b>  | Ability of administrative staff to use ICT, enhancing skills related to ICT usage                       | In-service mandatory training  |
| <b>Faculty Staff training and support in ICT use to improve the digital competence</b>   | Ability of the faculty staff to fully exploit the e-learning system                                     | In-service training  |
| <b>Library services. Research tools</b>  | Access of students and staff to library resources – textbooks, databases; research and study references | In-service training of librarians; an extension of the e-resources provided by the university library: e-catalog, books, periodicals, data, etc.   |
| <b>Technological support for assessment activities</b>   | Providing technology-supported assessment   | Providing tools for self-assessment activities of students over the semester and before the final exams  |
| <b>MOOCs or online courses</b>   | No MOOCs or online courses have been offered until now  | Exploring the opportunities for offering MOOCs   |
| <b>On-line services addressed to the students (class timetable, exam timetable, courses history, grades, digital library and etc.)</b> | Keeping each student fully informed on her academic portfolio.  | Extending the e-services and information supplied to students: admission services, e-payments and administrative services, study schedules, exams, grades, curricula and teaching programs, etc. |

3. Describe the digital methodology used in your **Learning Environment**, giving examples in different types of subjects related with the type of subjects described in B.1.

**You should include a small explanation with the following information:**

- **Type of ICT methodology used:** blended learning, distance learning for continuing education, multimedia tools/products such as simulations and animations.
- **Type of learning:** independent learning for e-learning exercises and lessons; collaborative learning in lab-activities.
- **Feedback:** The feedback (questionnaires) from current students for both faculty and administrative staff is collected primarily in traditional (paper-back) format; online questionnaires are currently developing. The feedback from graduates is collected in an e-form by e-mail.
- **Digital facilities:** Organization of meetings, seminars, conferences and workshops at national and international level

#### **IV. Competitiveness of Education**

The goal is to assess the competitiveness of your university and the academic program at a national, regional and EU-wide level as well as its conformity with the labor market requirements.

1. Do you receive a feedback from students – current and former ones – about the quality of education in the academic programs? Please answer at university level, Faculties or by areas described in Table 1, according with the characteristics and data of your institution giving information about the ways for collecting such information (i.e. questionnaires, surveys; regular meetings with graduates; alumni associations, etc.). Present specific documents, if applicable. Summarize the results.

Burgas Free University regularly receives feedback from both current and former students. The main sources of information are as follows:

1). Surveys of students following bachelor or master programs. These are conducted by the Quality Management Department. An anonymous questionnaire evaluates student's opinion on a specific subject studied. Students are asked about the usefulness of the subject, the specific knowledge and skills acquired, class attendance; overall satisfaction from the course; teaching methods used; classroom atmosphere; devices used in class, the quality of teaching, etc. The survey is conducted in the end of the semester during which the subject had been taught.

2). Surveys of graduates: They are also conducted by the Quality Management Department from 3 to 6 months and then from six to three years after their graduation. They evaluate the overall quality of the Program's curriculum: the applicability of the knowledge and skills gained; pros and cons; organization of the teaching process. They collect information on the professional development as well.

3). [The Alumni Association of Burgas Free University](#). It aims at uniting the university graduates. The Association is responsible for: organizing meetings, seminars and other formal or non-formal events related to the professional realization of students; involving its members in the educational process itself.

The Faculty maintains a database on its alumni for the purposes of surveying.

2. Do you collect information from employers of your students about the quality of education and students' professional qualification and preparation? Please, give information about the ways for collecting such information (i.e. questionnaires, surveys; regular meetings with employers, employers' associations, labor market institutions, etc.). Present specific documents, if applicable. Summarize the results.

The Faculty collects information from employers of the Faculty's graduates using the following methods:

1). Questionnaires which evaluate employers' opinion on the professional preparation and qualification of the Faculty's graduates. The recruiters assess various aspects such as: communications skills, specific knowledge related to the field of study, ability for team work, analytical skills, foreign language knowledge, technical skills, etc.

This information is used for curriculum upgrade. The recent surveys show that according to 3/4<sup>th</sup> of the employers the graduates possess knowledge and skills necessary for the working positions taken. An improvement of the foreign language proficiency had also been registered.

2). Seminars, discussions and roundtables uniting employers, academic staff and students both current and former ones. Between 2000 and 2014 the Faculty held 58 such events.

3). Work on joint projects involving companies, government and non-government bodies

4). [Student Center for Career Development](#) : It assists students in the process of job finding by providing information on the labor market demand and vacancies primarily within the region of Bourgas, by establishing contacts with employers, labor market institutions, businesses and NGOs. As well, it informs students about internship programmes, scholarships and grants, training programmes, etc. The Center organizes the annual forum “Good Careers” which connects students and recruiters in the region.

5). Internships – contracts with more than 30 private and public companies have been signed.

3. Student and teaching staff mobility per University/Faculty/Area described in table 1

|   |  |
|---|--|
| Total number of students per year over the last 2 years who have <u>studied</u> abroad (excluding the EU countries)   | 0  |
| Total number of student per year over the last 2 years who have <u>studied</u> in the EU  | 9 students under Erasmus Student Mobility Program, Germany, Portugal, Greece |
| Total number of teachers per year over the last 2 years who have visited foreign academic institutions (excluding the EU countries) for the purposes of delivering lectures/seminars, conducting scientific research, project participation | 0  |
| Total number of teachers per year over the last 2 years who have visited academic institutions in the EU for the purposes of delivering lectures/seminars, conducting scientific research, project participation.                           | 9 Portugal, Turkey, UK, Greece   |

4. Employability of graduates. (Please provide information by University/Faculty/Areas as described in Table 1 if such data is known and available.)

The next two indicators estimate the degree of qualification mismatch for your graduates. Please, provide data on:

- Share of graduates (% of the average total number of graduates per year) who over the last 5 years have started a job which require professional qualification and theoretical knowledge in the field of Engineering and Engineering Trade. These are students who work in accordance with their field of study/specialty (this indicator is related to the extent of horizontal qualification mismatch).

40% on average

- Share of graduates (% of the average total number of graduates per year) who over the last 5 years have taken working positions which require the same educational degree (i.e. bachelor or master) as that they possess. These are students who work in accordance with the educational degree acquired (this indicator is related to the extent of vertical qualification mismatch).

95% on average

The unemployment rate of the Faculty's graduates is below the average for the country or the region of Burgas. As well, the vertical qualification mismatch is very low (5%). Almost all graduates have occupied working positions requiring at least a bachelor degree. 23% of them are taking mid- or high-level managerial positions. The alumni are predominantly employed in the private sector; 78% of them admit that they are satisfied by the job. The latter is most clearly expressed for people graduated from Computer systems and technology program.

However, 60% of the graduates do not work in accordance with their field of study/specialty. The bigger extend of the horizontal qualification mismatch reflects primarily the tendencies in the regional labor market specifically the demand by the business sector since most of our former students work for local private companies. As a matter of fact, this tendency has been continuously improving with the growing demand of Engineering Specialists.

## 5. Education and training provided in a real-life working environment

5.1. Per areas described in table 1, please share the courses/subjects type for which part or all classes are conducted in a real-life working environment (i.e. companies, banks, factories, etc.)

Part of classes of the following subjects is held in a real-life working environment (companies, factories):

- Safety Management – Safety Management and Electrical Auditing (MP), Communications and Electronization for Renewable Energy Sources (BP), Electric Energy Distribution and Electrical Equipment (BP)
- Electric Machines - Communications and Electronization for Renewable Energy Sources (BP) & Electric Energy Distribution and Electrical Equipment (BP)
- Energetic Systems - Engineering and Exploitation of Energetic Systems (MP)
- Exploitation of Energetic Infrastructure - Communications and Electronization for Renewable Energy Sources (BP)
- Operation Management of an Energetic System – Engineering and Exploitation of Energetic Systems (MP)

5.2. The average number of academic hours per course/subject conducted in a real-life environment

Between 10 and 50% of the classes are held in a real-life environment (companies, factories).

5.3. Additional evidence on the practical orientation of the study and the practical training of students (i.e. internships during study, etc.).

Internship is mandatory for all Bachelor's degree programs but Informatics and Computer Science. It is carried out usually during the second year of study and brings between 3 and 8 ECTS.

## 6. University – Business links

Please, provide information on participation of specialists, experts, entrepreneurs, etc. in the educational process and/or curricula development, if any. Specify the average share of lectures/seminars delivered by them (% of total academic hours per course/subject.)

The Faculty of Computer Science and Engineering has been enhancing its links with specialists and experts. Some Master courses are taught jointly by the faculty staff and experts. The average share of classes held by practitioners is about 10%.

7. Does your university study the current tendencies and requirements of the labor market?

The university permanently studies the current tendencies in the labor market. The main sources of information comprise:

- Surveys of employers and BFU alumni (see section IV);
- Direct contacts with employers and university graduates through the Alumni Association and Student Center for Career Development (see section IV);
- Labor market analyses provided by government and non-government institutions and organizations (such as Ministry of Education and Science of Bulgaria, Bulgarian Chamber of Commerce, Ministry of Labor and Social Policy, etc.).

Recent studies indicate that along with the specific knowledge and skills in the field of study, 66% of employers consider as important additional skills such as: soft skills, communication skills, team work, problem solving skills. According to the Rating System of the Ministry of Education and Science which includes all Bulgaria public and private HEIs, BFU takes leading positions for Regional Importance.

8. Does your university/faculty offer or plan to offer joint degree programs with partner universities?

Currently, the university does not offer joint degree programs. It is open for establishing double degree education with HEIs inside or outside the European Union.

9. Please, discuss the Lifelong Learning (LLL) policy of your institution such as students, alumni, company members, retired citizens, other actions.

As part of its LLL policy, BFU offer more than 30 blended learning and online training courses. They are designed for current and former BFU students, secondary school students (Talents in Programming Academy, Robotics School), teachers in math, informatics and ICT as well as outside public. The courses include various activities such as lessons, lab work, brainstorming sessions, etc.

More information can be found at: <http://ucdo.bfu.bg/?q=bg/node/6> and <http://www.bfu.bg/bg/kursove-i-prodalzhavashto-obuchenie>. The list of courses is permanently updated in accordance with the changing demand for long-life learning education.

10. Future teaching methodologies and their implementation

Thinking about future students, current learning strategies followed by many of them before entering university, and ICT technologies:

Which key competences, skills and practices do you think that will be needed at university level to enhance students learning experience? Explain briefly under faculty staff, student and stakeholders' point of view.

The current state of education in the area of Engineering Studies presented by this Report implies that the following aspects need to be improved: usage of advanced ICT-based teaching approaches and methods; enhanced involvement of companies and employers in the educational process specifically in designing curricula and teaching programs; increasing the share of practice oriented disciplines in the curricula; introduction of MOOCs; enhancing the degree programs as well as the training courses offered to both current and potential consumers of the university's product.