



**Istarsko  
veleučilište**

Università  
Istria  
di scienze  
applicate

# COURSE CATALOGUE

ACADEMIC YEAR 2020/2021

## GENERAL INFORMATIONS

Istrian University of Applied Sciences has a long tradition of accepting incoming students. International cooperation provides many benefits, such as knowledge and skills exchange, introduction to foreign markets, cultures, traditions, etc. Furthermore, international cooperation supports personal development on both business and private levels. This brings possibilities for departing students to study abroad, and in doing so, strengthen their labor market competitiveness.

An attractive location in the very south of Istria, in the city of Pula, known as the tourist, industrial, as well as a historical center of our county, offers a wealth of opportunities for the development and advancement of emerging professionals.

Education as the key to sustainable economic and social development is a priority for a stable and secure future. Higher education institutions are one of the fundamental factors for economic growth, prosperity and competitiveness.

Our strengths that we cherish and share with our students are: focus on practical knowledge, application of teamwork in the teaching process, working with small groups which allows us to dedicate more time to students' needs, and last but not least providing professional training in the best companies in our region.

Therefore, our mission as a higher education institution is to educate experts who will contribute to the development and prosperity of our region and state through their knowledge and skills. Our motto "Knowledge for our development" will guide us in our mission through the years to come.

Being part of Europe, we also welcome foreign students willing to participate in our educational process so that they can make good use of the provided knowledge back in their home country.

### Contacts

Address: Istrian university of Applied sciences

Istarsko veleučilište – Universtà Istriana di scienze applicate

Riva 6

52100 Pula

Republic of Croatia

Phone: +385 (0)52 381-412

e-mail: [dekanat@iv.hr](mailto:dekanat@iv.hr)

website: <https://www.iv.hr/en/>

### Administrative information

ERASMUS IDENTIFICATION CODE: HR PULA02

OIB (PID): 79550001298

PDV (tax) identification number: HR79550001298

Bank account: OTP banka d.d. IBAN: HR4724070001118015096

### Student's office contact

Vladimir Gnip, mag.oec.

Phone: +385 (0)52 381-410

e-mail: [vgnip@iv.hr](mailto:vgnip@iv.hr)

## Team for International Cooperation and Mobility

The main task of the Team for International Cooperation and Mobility is increasing the quality of studies through international cooperation and international mobility, linking higher education and participation in research and professional projects in order to increase economic growth. The members of the Team for International Cooperation and Mobility are available to incoming and outgoing students and staff in solving professional and administrative tasks of mobility programs.

Team for International Cooperation and Mobility of Istrian University of Applied Sciences consists of three members:

1. Erasmus coordinator and Team leader

Viktor Vojnić

e-mail: [vvojnic@iv.hr](mailto:vvojnic@iv.hr)

2. Team member for student support

Andrea Škalec Božac

e-mail: [abozac@iv.hr](mailto:abozac@iv.hr)

3. ECTS coordinator

Sanja Grbac Babić, senior lecturer

e-mail: [sgrbac@iv.hr](mailto:sgrbac@iv.hr)

For any questions and additional information, you can contact our international e-mail: [international@iv.hr](mailto:international@iv.hr)

## Additional services for Students

Every incoming student gets an X-card – which is a student's card used for eating in the student canteen and allows discounts in certain places, but it also confirms the student status.

### 1. Students' canteens

The meals for the students of Pula, subsidized through the so-called student X-card are served in a state-of-the-art restaurant and pizzeria opened within the university campus.

Address: Preradovićeva 28b, 52100 Pula

E-mail: [restoran@scpu.hr](mailto:restoran@scpu.hr)

Website: <https://www.scpu.hr/hr/prehrana/>

### 2. The University Library of Pula

Incoming students have the right to use the University Library of Pula as a library or a reading room.

Address: Herculov prolaz 1, 52100 Pula

Telephone: 00385 (0)52 213 888, 00385 (0)52 388 831

Fax: 00385 (0)52214 603

E-mail: [skpu@unipu.hr](mailto:skpu@unipu.hr)

Website: <http://www.skpu.hr>

### 3. Public transport

There is a good network of public urban and suburban passenger land transport in Pula. The Company Pulapromet d.o.o. provides its services throughout the territory of the Cities of Pula and Vodnjan and the Municipalities of Medulin, Ližnjan, Fažana, Barban and Marčana.

Website: [www.pulapromet.com/en/](http://www.pulapromet.com/en/)

In addition to this company, taxi transport is also available.

#### 4. Online student community for exchange students

Erasmusu is an online international student community which helps students on mobility to find:

- Information about any city (where to eat, where to go out, which places you should visit, etc.);
- Information about the Universities in your destination;
- Blogs about experiences of people that have been living there (they are really valuable!);
- Forums where you can meet people that have lived there or that is going to be there the same year as you;
- Job / traineeship offers;
- The best accommodations to book through our safe system;

Website: <https://erasmusu.com/>

<https://erasmusu.com/en/erasmus-pula>

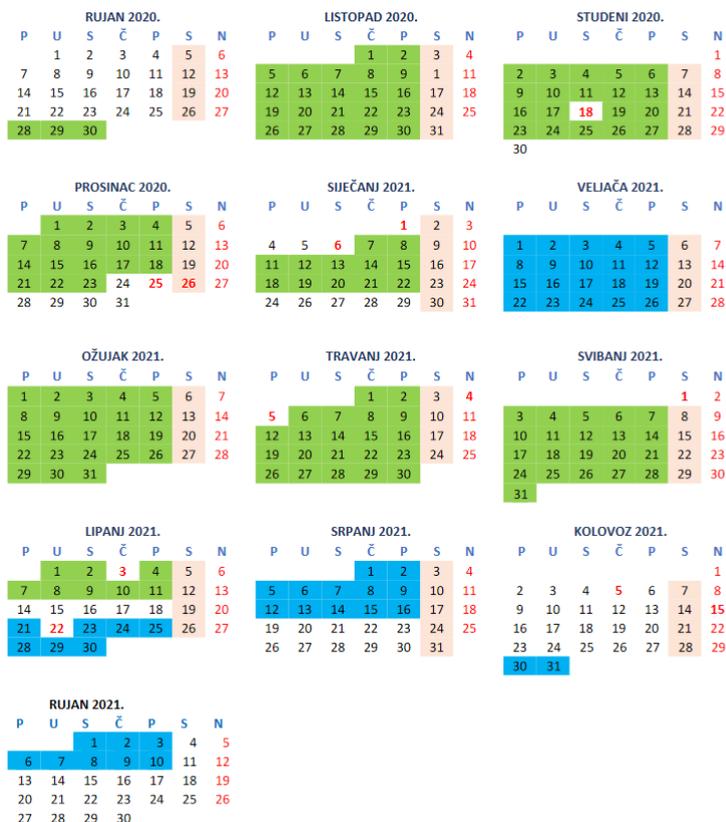
## ECTS CREDITS

ECTS credits are a numerical value (between 1 and 60) allocated to course units to describe students' workload required to complete them. They reflect the quantity of work each course requires in relation to the total quantity of work required to complete a full year in practical work, seminars, homework and examination or other assessment activities. Each course does not carry the same number of points but the total number of points in each semester is 30 points which must be evenly distributed on all courses in the semester due to the learner content of each college. All subjects are scored – obligatory and elective. The academic year consists of two semesters, each carrying 30 points for a total of 60 points for academic year. Points are earned and attributed to the student after passing the exam or some other verification of student activities according to the prescribed curriculum (syllabus). These achieved ECTS credits make it easier to assess the level of knowledge that students have when transitioning to other institutions of higher education in the country and/or abroad. At Istrian University of Applied Sciences 1 ECTS credit corresponds to 30 hours of student load.

The Grading system at the Istrian University of Applied Sciences is as follows:

| <b>Numeric grade</b> | <b>Descriptive grade</b> | <b>ECTS grade</b> |
|----------------------|--------------------------|-------------------|
| 5                    | excellent                | A                 |
| 4                    | very good                | B                 |
| 3                    | good                     | C                 |
| 2                    | sufficient               | D, E              |
| 1                    | insufficient             | FX, F             |

# ACADEMIC CALENDAR



## KALENDAR NASTAVE ISTARSKOG VELEUČILIŠTA - UNIVERSITÄ ISTRIANA DI SCIENZE APPLICATE ZA AKADEMSKU GODINU 2020./2021.

Zimski semestar: 28.09.2020.-29.01.2021.

Ljetni semestar: 01.03.2021.-18.06.2021.

Ispitni rokovi:

01.02.2021.-26.02.2021.

21.06.2021.-16.07.2021.

30.08.2021.-10.09.2021.

Božićni i novogodišnji praznici: 24.12.2020.-06.01.2021.

Godišnji odmori se mogu koristiti između 26.07.2021. i 27.08.2021.

### Praznici i blagdani

|             |  |
|-------------|--|
| 01.11.2020. | Dan svih svetih  |
| 18.11.2020. | Dan sjećanja na žrtve Domovinskog rata i Dan sjećanja na žrtvu Vukovara i Škabrnje |
| 25.12.2020. | Božić  |
| 26.12.2020. | Sveti Stjepan  |
| 01.01.2021. | Nova Godina  |
| 06.01.2021. | Sveta tri kralja   |
| 04.04.2021. | Uskrs  |
| 05.04.2021. | Uskrsnji ponedjeljak   |
| 01.05.2021. | Praznik rada   |
| 03.06.2021. | Tijelovo   |
| 22.06.2021. | Dan antifašističke borbe   |
| 05.08.2021. | Dan pobjede i domovinske zahvalnosti   |
| 15.08.2021. | Velika gospa   |

|  |   |
|--|---|
|  | neposredna nastava                            |
|  | ispitni rokovi                                |
|  | godišnji odmori-neradni dani-dani bez nastave |
|  | radni dani prema potrebi Veleučilišta         |

Figure 1: Academic calendar 2020/2021

## STUDY PROGRAMMES

In the academic year 2020/2021 three study programmes are performed, which are:

### 1. Undergraduate Professional Study Programme: Mechatronics

**Duration:** 3 years, (6 semesters)

**Professional title:** professional bachelor (baccalaureus) in the field of mechatronics

**Credits:** 180 ECTS

**Fields of education:** mechanical engineering, electrical engineering, automatization, electronics, energetics, informatics.

**Head of the study programme:** Sanja Grbac Babić, senior lecturer

The undergraduate professional study in Mechatronics combines basic knowledge of mechanical engineering, electrical engineering, computer science, and robotics. It is applicable and sought after in all branches of economy. The content of the study is focused on new technologies. In the modern world, mechatronics experts are an important part of competitive business. Mechatronics is a very important part of the STEM (science, technology, engineering and mathematics) field.

Professional bachelors in the field of Mechatronics are creators who apply ideas and knowledge in mechanical and electrical engineering to design complex systems for today's industry.

Advantages of the study program:

- a large number of hours of professional practice enables future bachelors to apply the knowledge acquired in a practical way and get acquainted with the labor market in order to find employment after study
- cooperation with the Research Centre for Metal Industry in Istrian County - METRIS enables the application of acquired knowledge and skills on state-of-the-art analytical equipment in modernly equipped chemical, mechanical, and biotechnical laboratories
- a modern approach to education

### Learning Outcomes of the Undergraduate Professional Study Programme in Mechatronics

Upon finishing the study programme in Mechatronics, students will acquire the following competences:

#### Generic competences:

- ability to use a second language in professional literature and professional communication;
- ability to apply knowledge in mathematics and physics to engineering issues;
- ability to use techniques, skills and modern tools necessary in engineering practice;
- ability to relate engineering design, manufacturing and marketing to user's requirements for products and services;
- ability to identify, model and solve engineering issues.

#### Personal competences:

- knowledge of contemporary issues in the professional area and society;
- responsibility, consistency, accuracy and promptness;
- ethical and moral approach to work;

- critical evaluation of arguments, assumptions and data in order to make opinion and contribute to the solution of a problem;
- readiness to do fieldwork and work under non-standard conditions;
- work experience with project teams and in industry;
- presenting information, ideas, problems and solutions to the professional and general public;
- communication skills in professional communications and with clients in both English and Croatian;
- positive professional and personality traits;
- adaptability to new technologies and techniques as a part of lifelong learning process;
- openness to new knowledge, experience and cultural circumstances;
- flexibility and adaptability to finding technical solutions based on unquestionable observance of basic ethical principles, regulations and professional rules.

#### Subject specific competences:

- ability to design machine elements and circuits taking into consideration the principles of strength, deformation, kinematics and dynamics;
- ability to propose types of material and technological procedures;
- ability to design and implement hydraulic and pneumatic systems in all technical branches;
- ability to propose sensors, actuators, energy and control units, communication protocols and the accompanying equipment to be used in automation of various technical processes in mechatronics (electric drives, machine tools, fluid storage processes, heat and transport processes);
- ability to calculate regulator parameters to be used in regulation of various technical processes in mechatronics;
- ability to design electronic circuits containing microcontrollers by means of EDA tools;
- ability to devise program solutions to embedded computer systems used in various technical processes in mechatronics;
- ability to plan production and projects and optimize resources;
- ability to work out foundations for a modern approach to quality assurance;

#### Electives:

- ability to control CNC machines, CAD/CAM systems and flexible manufacturing systems;
- ability to analyze robot and manipulator operations in mechatronics.

Direct classes of each course are held in the form of:

- lectures and/or (L)
- exercises and/or (E)
- seminars (S)

according to the table that follows.

|             | NAME OF THE COURSE                               | Weekly teaching load |   | ECTS | TEACHER  |
|-------------|--|----------------------|---|------|--|
|             |  | L                    | E |      |  |
| 1. semester | Physics  | 2                    | 3 | 6    | Mr.sc. Miro Plavčić, pred.                                       |
|             | Mathematics                                      | 3                    | 3 | 7    | Đani Žufić, pred.  |
|             | Applied Mathematics                              | 2                    | 2 | 5    | Izv.prof.dr.sc. Vanja Travaš                                     |
|             | Computers Application Basics                     | 1                    | 2 | 3    | Marko Turk, pred.  |
|             | Programing Basics                                | 1                    | 3 | 5    | Marko Turk, pred.  |
|             | Technical Documentation                          | 1                    | 3 | 4    | Matej Kolarik, pred.   |
| 2. semester | Matlab   | 1                    | 2 | 3    | Matej Kolarik, pred.   |
|             | Mechanics and Strength of Materials              | 2                    | 3 | 6    | Prof. dr. sc. Roberto Žigulić<br>Manuel Širola, asistent         |
|             | Mechatronic Machine Elements                     | 2                    | 2 | 5    | Dr.sc. Neven Munjas, pred.                                       |
|             | Fundamentals of Electrical Engineering           | 2                    | 3 | 6    | Prof.dr.sc. Nino Stojković<br>Even Živić, asistent               |
|             | Materials and Manufacturing Processes            | 2                    | 2 | 5    | Dr. sc. Davor Stanić, pred.                                      |
|             | Sensors  | 2                    | 2 | 5    | Sanja Grbac Babić, v. pred.                                      |
| 3. semester | Electronic Elements and Circuits                 | 2                    | 2 | 5    | Sanja Grbac Babić, v. pred.                                      |
|             | Elements of Automation                           | 2                    | 2 | 5    | Eduard Lorencin, pred.   |
|             | Power Electrical Engineering                     | 2                    | 3 | 6    | Sanja Grbac Babić,v.pred.<br>Even Živić, asistent                |
|             | Computer Aided Design                            | 2                    | 3 | 5    | Dr.sc. Neven Munjas, pred.<br>Manuel Širola, asistent.           |
|             | Essentials of Mechanisms                         | 2                    | 2 | 5    | Prof. dr. sc. Roberto Žigulić<br>Manuel Širola, asistent.        |
|             | English Language in Mechatronics                 | 2                    | 2 | 4    | Mr. sc. Zrinka Friganović Sain, pred.<br>Viktor Vojnić, asistent |
| 4. semester | System Modelling and Simulation                  | 2                    | 3 | 5    | Izv.prof.dr.sc. Vanja Travaš                                     |
|             | Pneumatics and Hydraulics                        | 2                    | 3 | 6    | Doc. dr. sc. Goran Gregov  |
|             | Processing Computers                             | 2                    | 3 | 6    | Marko Turk, pred.  |
|             | Automatic Control                                | 2                    | 2 | 5    | Matej Kolarik,pred.  |
|             | Business English Language in Mechatronics        | 2                    | 2 | 4    | Mr.sc. Zrinka Friganović Sain, pred.<br>Viktor Vojnić, asistent  |
|             | Manipulators and Robots – elective course        | 2                    | 2 | 4    | Marko Turk, pred.<br>Dino Krivičić, asistent                     |
|             | Technical Materials – elective course            | 2                    | 2 | 4    | Dr.sc. Irina Pucić, pred. (u izboru)                             |
| 5. semester | Electrical Servo Drives                          | 2                    | 2 | 5    | Matej Kolarik, pred.   |
|             | Communication Techniques in Mechatronics         | 2                    | 1 | 4    | Sanja Grbac Babić, v.pred.                                       |
|             | Metrology and Quality Control                    | 2                    | 2 | 4    | Doc.dr.sc. Vedrana Špada   |
|             | Maintenance of Technical Systems in Mechatronics | 2                    | 1 | 4    | Dr.sc. Davor Stanić, pred.                                       |
|             | Designing Embedded Computer Systems              | 2                    | 2 | 5    | Marko Turk, pred.  |
|             | Production and Project Management                | 2                    | 1 | 4    | Dr.sc. Neven Munjas, pred.                                       |
|             | Leadership skills                                | 2                    | 2 | 4    | Doc.dr.sc. Dijana Drandić  |

|             |   |   |       |    |  |
|-------------|---|---|-------|----|--|
| 6. semester | Methodology of Professional and Scientific Research | 1 | 1     | 2  | Doc. dr. sc. Dijana Drandić                  |
|             | Semester Paper (Project)                            | 1 | (75)  | 5  | Marko Turk, pred.<br>Dino Krivičić, asistent |
|             | Professional Practice                               | 0 | (240) | 7  | Head of the study programme                  |
|             | Organization Architecture                           | 2 | 2     | 4  | Dr.sc. Daglas Koraca, v.pred.                |
|             | Final Thesis  | 0 | (320) | 12 |  |

## 2. Specialist Graduate Study: Creative Management in Processes

**Duration:** 2 years (4 semesters)

**Professional title:** professional specialist in the field of creative management

**Credits:** 120 ECTS

**Fields of education:** management, organization, entrepreneurship

**Head of the study programme:** Boris Marjanović, PhD, senior lecturer

The study of Creative Management in Processes empowers professionals ready to be proactive in responding to contemporary business challenges. The study is based on knowledge and skills in the fields of management, entrepreneurship, organization, and informatics.

Upon graduation, professional specialists in the field of Creative Management are capable of management at a high organizational level of business. Acquired skills from various fields enable the development of experts who will make a significant contribution to the success of companies in the domestic and foreign markets with their knowledge. Professional specialists in the field of Creative Management utilize acquired knowledge and skills to analyze, manage, optimize, and automate business processes.

Studying Creative Management in Processes is an ideal continuation of education for anyone who wants to develop the social skills and techniques necessary for contemporary executives.

Advantages of the study program:

- individualized work in small groups enables students to easily acquire and apply knowledge through concrete examples from practice
- the contemporary social study with a developed curriculum equips professionals to meet the needs of everyday business environment,
- the contemporary interdisciplinary knowledge and skills acquired throughout the course of the study are applicable at almost all managerial business levels.

By applying creative methods and techniques to effectively manage processes, professional specialists in the field of Creative Management improve business results and create new values for themselves as individuals, as well as for employers and society.

Direct classes of each course are held in the form of:

- lectures and/or (L)
- exercises and/or (E)
- seminars (S)

according to the table that follows.

|             | NAME OF THE COURSE                             | Weekly teaching load |   |   | ECTS | TEACHER  |
|-------------|--|----------------------|---|---|------|--|
|             |  | L                    | E | S |      |  |
| 1. semester | Creative Management                            | 3                    | 0 | 1 | 8    | Dr.sc. Daglas Koraca, v.pred.<br>Vladimir Filipović, stručni suradnik    |
|             | Digital Business                               | 3                    | 0 | 1 | 8    | Sanja Grbac Babić, v. pred.  |
|             | Basics of methodology for scientific research  | 3                    | 0 | 1 | 6    | Doc.dr.sc. Dijana Drandić  |
|             | Finance Control                                | 1                    | 3 | 0 | 4    | Dr.sc. Daglas Koraca<br>Mr.sc. Andrea Vareško, stručni suradnik          |
|             | Business communication in English 1            | 1                    | 0 | 2 | 4    | Mr.sc. Zrinka Friganović Sain, pred.<br>Viktor Vojnić, asistent          |
| 2. semester | Project Management                             | 3                    | 2 | 0 | 8    | Dr.sc. Daglas Koraca, v.pred.<br>Mr.sc. Andrea Vareško, stručni suradnik |
|             | Marketing Management                           | 3                    | 2 | 0 | 8    | Dr.sc. Boris Marjanović, v. pred.<br>David Košara, asistent              |
|             | Communication Skills                           | 3                    | 0 | 1 | 6    | Dr.sc. Mario Bogdanović, prof.v.šk.                                      |
|             | Product and service branding                   | 1                    | 3 | 0 | 4    | Dr.sc. Boris Marjanović, v. pred.<br>David Košara, asistent              |
|             | Business Information Systems – elective course | 2                    | 0 | 1 | 4    | Marko Turk, pred.  |
|             | Computer skills - elective course              | 1                    | 0 | 2 | 4    | Sanja Grbac Babić, v.pred.<br>Dino Krivičić, asistent                    |
| 3. semester | Process management                             | 3                    | 2 | 0 | 8    | Dr.sc. Mario Bogdanović, v.pred.   |
|             | Financial Management                           | 3                    | 2 | 0 | 8    | Dr.sc. Daglas Koraca, pred.  |
|             | Human Resource Management                      | 3                    | 0 | 1 | 6    | Dr.sc. Boris Marjanović, v.pred.<br>Vladimir Filipović, stručni suradnik |
|             | Business communication in English 2            | 1                    | 3 | 0 | 4    | Mr.sc. Zrinka Friganović Sain, pred.<br>Viktor Vojnić, asistent          |
|             | Digital Marketing - elective course            | 2                    | 0 | 1 | 4    | Dr.sc. Boris Marjanović, v. pred.<br>Miško Macolić Tomičić, pred.        |
| 4. semester | Entrepreneurship                               | 2                    | 2 | 0 | 6    | Mr.sc. Edo Cetina, predavač.   |
|             | Management Accounting                          | 2                    | 1 | 0 | 4    | Izv.prof.dr.sc. Ticijan Peruško  |
|             | Corporate social responsibility                | 2                    | 0 | 1 | 4    | Dr.sc. Daglas Koraca,pred.   |
|             | Intercultural aspects of management            | 2                    | 0 | 1 | 4    | Doc.dr.sc. Dijana Drandić  |
|             | Graduate thesis                                |                      |   |   | 12   |  |

#### Learning Outcomes of the Specialist Graduate Study in Creative Management in Processes

- to critically evaluate the effects of implementing the generated ideas on business;
- to evaluate the key features of digital business;
- to apply scientific research methods and formulate the concept of the thesis;
- to analyze teamwork performance in accordance with team development characteristics;

- to critically evaluate the effects of project implementation;
- to evaluate opportunities for implementing marketing strategies under the given conditions;
- to identify and critically analyze the underlying assumptions of communication competence in the business environment;
- to optimize the business process using modern methods and tools;
- to evaluate the profitability of the business investment and the real time for the return on investment, and the implications for the business operator;
- to evaluate investment in human resources through the concept of creating new value;
- to critically evaluate the importance of implementing entrepreneurial strategies within the available resources;
- to evaluate the importance of accounting indicators in strategic planning;
- to assess the impact of corporate social responsibility to the economy and sustainable development;
- to analyze and compare the influence of certain characteristics of the culture of society on the functioning of contemporary management.

### 3. Undergraduate professional study: Polytechnics

**Duration:** 3 years, (6 semesters)

**Professional title:** professional bachelor (baccalaureus) in the field of Polytechnics

**Credits:** 180 ECTS

**Filed of education:** mechanical engineering, electrical engineering, electronics, informatics, management, teamwork

**Head of the study programme:** Sanja Grbac Babić, senior lecturer

The undergraduate professional study of Polytechnics is aligned with the needs of the Croatian manufacturing industry and as such ensures the acquisition of classical basic knowledge and skills of engineers, as well as modern planning, management and optimization skills. The content of the study is focused on the fields of engineering, computer science, management and economics.

The program is based on similar study programs recognized in the European Union and the USA.

The modern approach to the manufacturing industry is a complex system of design, organization and management. The combination of different knowledge and skills of engineers gained through the completion of this program facilitates the detection of errors in all production processes, therefore, professional bachelors in the field of polytechnics participate in all stages of design, management and optimization of processes, technological cycles, systems and plants.

Professional bachelors in the field of polytechnics are not narrowly specialized, but possess the breadth of knowledge required to view a manufacturing or a service business system as a complex entity or process.

Advantages of the study program:

- individualized work in small groups enables students to easily acquire and apply knowledge through concrete examples from practice,
- cooperation with the Research Centre for Metal Industry in Istrian County - METRIS enables the application of acquired knowledge and skills on state-of-the-art analytical equipment in modernly equipped chemical, mechanical, and biotechnical laboratories,
- a modern approach to education.

Direct classes of each course are held in the form of:

- lectures and/or (L)
- exercises and/or (E)
- seminars (S)

according to the table that follows.

|             | NAME OF THE COURSE                                  | Weekly teaching load |      | ECTS | TEACHER   |
|-------------|---|----------------------|------|------|---|
|             |   | L                    | E    |      |   |
| 5. semester | Constructions                                       | 2                    | 2    | 4    | Dr.sc. Neven Munjas, pred.  |
|             | Quality Management                                  | 2                    | 2    | 4    | Doc.dr.sc. Vedrana Špada  |
|             | Project Management                                  | 3                    | 2    | 5    | Dr. sc. Boris Marjanović, v. pred.<br>Mr.sc. Andrea Vareško, stručni suradnik |
|             | Automatic Control Basics                            | 2                    | 2    | 4    | Doc.dr.sc. Goran Gregov   |
|             | Professional Practice                               |                      | (94) | 13   | Head of the study programme   |
| 6. semester | Business and Production Processes                   | 2                    | 3    | 5    | Marko Turk, pred.   |
|             | Methodology of Professional and Scientific Research | 2                    | 2    | 4    | Doc.dr.sc. Dijana Drandić   |
|             | Marketing   | 2                    | 1    | 3    | Dr.sc. Boris Marjanović, v. pred.<br>David Košara, asistent                   |
|             | Sustainable development                             | 2                    | 2    | 4    | Izv.prof.dr.sc. Smiljana Goreta Ban<br>Silvia Buttignoni, stručni suradnik    |
|             | Professional Practice                               | 0                    | (40) | 7    | Voditelj studija  |
|             | Final thesis and Defense                            | 0                    | 0    | 7    |   |

### Learning Outcomes of the Undergraduate professional study in Polytechnics

- to design industrial manufacturing processes by applying knowledge and skills in mathematics, natural sciences, and informatics, and by respecting the engineering and economic principles;
- to design and maintain technical production systems for real economic, environmental, ethical, health, and safety conditions;
- to analyze interdisciplinary industrial problems from a technical standpoint, enriched with economic, legal and IT perspectives;
- to create engineering activities in production preparation, procurement and sales;
- to make decisions based on clearly identified evidence and defined criteria;
- to solve engineering problems using modern techniques, skills and engineering tools;
- to design the work of multidisciplinary teams;
- to create multidisciplinary industry ventures in a team;
- to plan and conduct experiments and interpret experimental data and results;
- to communicate professionally in local and foreign languages;
- to assess the impact of manufacturing processes on environmental change;
- to assess the impact of industrial ventures on global economic, legal, and general social phenomena;
- to assess lifelong learning needs and to engage in lifelong learning;
- to develop and critically evaluate a solution in the domain of marketing application in practice;
- to develop and critically evaluate a solution in the domain of applying a business organization in practice.