



# DEVELOPMENT STRATEGY

University of Zagreb  
Faculty of Chemical Engineering  
and Technology  
2021 – 2031



Zagreb, 2021

# Development Strategy of the Faculty of Chemical Engineering and Technology for the period 2021 – 2031

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## Name of higher education institution:

University of Zagreb, Faculty of Chemical Engineering and Technology

## Name of the university a part of which the evaluated higher education institution is:

University of Zagreb

## Year of foundation:

1919

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Dean, prof. Tomislav Bolanča, PhD

## Name of the bank and account number through which the higher education institution operates:

Zagrebačka banka, IBAN: HR7223600001101338626

# PREAMBLE

The Faculty of Chemical Engineering and Technology is a promoter of knowledge, progress, social responsibility and democracy, and believes that the fundamental progress of the Faculty itself results in a positive effect on individuals and the society as a whole. Students and professors are encouraged in their efforts to live not only as exemplary citizens, but to succeed in the development of their careers, realize themselves in social life and motivate others in creating a better common tomorrow. We believe that teaching and supporting personal development, which later results in measurable scientific and developmental excellence, are much more than the mentioned achievements.



This strategy presents a modern Faculty based on the promotion of scientific excellence, publicity and open-door policy. With its primary activities in the field of science, teaching, and knowledge and technology transfer, the Faculty must strengthen the links that make the community successful, namely the green economy and smart digitalization. In this way, the development and growth of the economy, sustainability and environmental protection, as well as increased efficiency and social transparency, are strategically influenced. Proud of yesterday, confident in today and inspired for tomorrow, we are embarking on ten new successful years in the life of our Faculty.

Sincerely,

  
Prof. Tomislav Bolanča, PhD

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# 1

## HISTORICAL FRAMEWORK

At the beginning of the twentieth century, progress in Croatia was linked to the academic community as key to achieving betterment. In 1919, the Technical College in Zagreb was founded, from which today's Faculty of Chemical Engineering and Technology of the University of Zagreb later developed. Vladimir Njegovan became the first professor of analytical and inorganic chemistry, dean and the originator of the study of chemical engineering. The promotion of the basic postulates of scientific excellence attracted top scientists like Vladimir Prelog, who developed the chemical engineering department at the then Technical Faculty of the University of Zagreb, achieving significant cooperation with the economy, especially with the then Kaštel factory, which later, after World War II, grew into the famous Pliva. Although Professor Prelog went abroad early (ETH Zürich) and achieved a career that culminated in winning the Nobel Prize in 1975 (one of the greatest achievements of the Croatian people in general in history), he constantly collaborated with colleagues from his homeland. It can be rightly argued that the Faculty was a very strong incubator of knowledge and its transfer to the economy during the previous state, from which a significant share of gross domestic product was generated. This continues to this day, albeit on a much smaller scale. The professors of our Faculty were deeply aware that higher education activity cannot be complete if there is no socially responsible environment in which it was created and from which it emerges. The first woman doctor of technical sciences in Croatia, Vjera Marjanović-Krajovan, the first Prime Minister of the independent Republic of Croatia, Franjo Gregurić, the first and so far only female rector of the University of Zagreb, Helena Jasna Mencer, were students of this Faculty.

# 2

## SITUATION ANALYSIS AND STARTING POINT

### STRENGTHS

- Tradition and experience.
- Competence of teachers and employees.
- Satisfactory equipment of the Faculty with regard to the immediate environment.
- International study in English.
- Partial self-sustainability.
- Developed academic entrepreneurship.

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### WEAKNESSES

- Insufficient staff and low student involvement in professional activities.
- Insufficient recognition of the Faculty at the national, and especially international level.
- Insufficient interest of employees to apply international scientific and professional projects.

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### OPPORTUNITIES

- Increasing public visibility by arguing excellence of the Faculty's work in the wider community.
- Strengthening the competencies of students and doctoral students by engaging in scientific and professional activities of the Faculty.
- Direct involvement of business stakeholders in the scientific and teaching process.
- Increasing the number of lifelong learning programs.
- Including the experience of academic entrepreneurship and commercialization of innovation in all levels of the Faculty.

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### DANGERS

- Lack of space capacity and staff.
- Impossibility to apply for projects due to unresolved property ownership relations.
- Insufficient mobility and internationalization.



# 3

## AGENDA

### 3.1. VISION

The Faculty of Chemical Engineering and Technology is a central institution in the Republic of Croatia dedicated to the creation, transfer and application of new knowledge in the field of chemical engineering, applied chemistry, materials engineering and environmental engineering. By promoting academic freedom, excellence, inclusiveness and sustainability, it seeks to actively influence the development of the university space, innovative capacity, economic growth and the social development of the European Union.

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### 3.2. MISSION

The Faculty of Chemical Engineering and Technology is ready to respond to the challenges of modern society by placing students at the center of activities, while relying on the latest scientific achievements, developed quality management system and technology transfer experience. Continuous improvement of existing and opening of new study programs, internationalization and increased mobility, as well as implemented lifelong learning are the guarantor of the competitiveness of our alumni, sustainability and progress of our Faculty.

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### 3.3. VALUES

- Academic freedom. Reviewing scientific achievements.
  - Excellence. Striving to the highest standards.
  - Innovation. Supporting creativity.
  - Sustainability. Strategically anticipating.
  - Inclusiveness. Respecting diversity.
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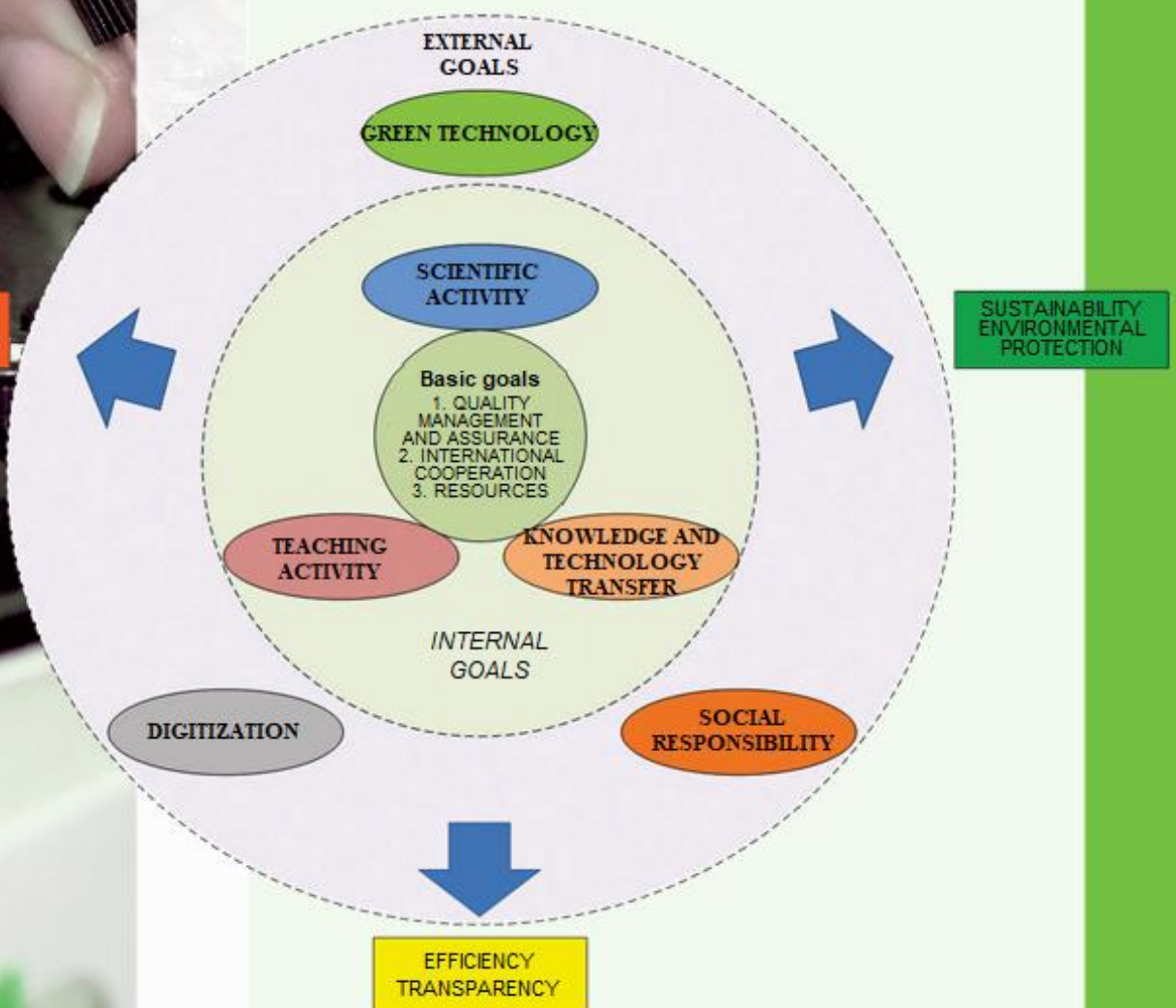




## 4

STRATEGIC GOALS,  
MEASURES AND  
ACTION PLAN

Strategic goals are not islands; they are interconnected. Achieving one affects the accomplishment of all others. At the heart of the Faculty's strategy for the period from 2021 to 2031 is the student, who will, with the help of all the Faculty's resources, become the bearer of these same goals in the future. Goals can be divided into internal and external. Internal goals relate to the integration of scientific and teaching activities and the transfer of knowledge and technology. External goals are in line with the scientific, economic and social demands of the future, namely green technologies, digitization and social responsibility. The synergy of the entire system is a basic precondition for achieving development and economic growth, sustainability and environmental protection, as well as greater efficiency and transparency.



## 4.1. BASIC STRATEGIC OBJECTIVES, MEASURES; ACTION PLAN AND COMPLIANCE WITH DOCUMENTS

### 4.1.1. Quality management and assurance

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#### OBJECTIVE (C1)

Continuously improve all processes and activities to ensure sustainable development of the Faculty.

#### MEASURES (M1)

1. Link quality assurance and strategic planning.
2. Identify new development guidelines.
3. Improve the quality assurance process.

#### ACTION PLAN (AP1)

1. Based on external evaluation and through self-analysis, continuously develop procedures for improving quality in all segments of the Faculty's work, and the level of their implementation.
2. Continuously conduct surveys to monitor all elements of the process.
3. Continuously change and supplement study programs.
4. Evaluate the quality of study programs by monitoring the careers of alumni.

#### COMPLIANCE WITH DOCUMENTS (UD1)

1. Strategy of the Quality Assurance System of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Strategija\\_sustava\\_osiguravnja\\_kvalitete.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Strategija_sustava_osiguravnja_kvalitete.pdf))
2. Education, Science and Technology Strategy (<https://mzo.gov.hr/UserDocsImages/dokumenti/Obrazovanje/Strategija%20obrazovanja,%20znanosti%20i%20tehnologije.pdf>)

### 4.1.2. International cooperation

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#### OBJECTIVE (C2)

Raise the level of global presence and create a significant international strategic partnership.

#### MEASURES (M2)

1. Emphasize and promote the importance of internationalizing strategic plans and employment.
2. Realize new international partnerships.
3. Provide administrative preconditions for the promotion of globalization.
4. Develop curricula with the aim of global competitiveness.
5. Increase the number of domestic students who will attend programs in English and carry out student internships outside Croatia.

**ACTION PLAN (AP2)**

1. Continuously encourage research teams and institutes to apply for international projects and join international research teams.
2. Continuously encourage the involvement of experienced researchers in world and European scientific and professional organizations.
3. Promote international cooperation at all levels of the Faculty's activities.
4. Continuously encourage the organization of international workshops and seminars.
5. Increase the number of courses in English.
6. Continuously encourage international mobility of teachers, students and non-teaching staff.
7. Continuously encourage cooperation with universities outside the Republic of Croatia.
8. Integrate study at external universities with the Faculty's curriculum.
9. Define potential strategic partners of the Faculty.
10. Establish an interdisciplinary team that will evaluate potential collaborations and their compliance with the Faculty's mission.
11. Develop instructions for applying for international study programs in which the Faculty will participate.
12. Enable internships abroad without losing the academic year.

**COMPLIANCE WITH DOCUMENTS (UD2)**

1. Research, Technology Transfer and Innovation Strategy of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Javne\\_rasprave/Pet\\_strateskih\\_dokumenata\\_01.2014/2016\\_Strategija\\_istrazivanja\\_transfera\\_tehnologije\\_i\\_inovacija\\_Sveucilista\\_u\\_Zagrebu.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Javne_rasprave/Pet_strateskih_dokumenata_01.2014/2016_Strategija_istrazivanja_transfera_tehnologije_i_inovacija_Sveucilista_u_Zagrebu.pdf))
2. Internationalization Strategy of the University of Zagreb 2014 – 2025 ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Startegija\\_Internacioanlaizacije.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Startegija_Internacioanlaizacije.pdf))
3. Croatia Education, Science and Technology Strategy (OG 124/2014-2364, [https://narodne-novine.nn.hr/clanci/sluzbeni/2014\\_10\\_124\\_2364.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2014_10_124_2364.html))
4. Development Strategy of the Republic of Croatia "Croatia in the 21<sup>st</sup> Century" – Science (Other, OG 108/2003-1429, [https://narodne-novine.nn.hr/clanci/sluzbeni/2003\\_07\\_108\\_1429.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2003_07_108_1429.html))
5. Plan for the European Research Area: Implementation Plan of the Republic of Croatia for the period 2016 – 2020 (<https://mzo.gov.hr/UserDocsImages/dokumenti/Znanost/EIstrazivackiProstor/Plan%20implementacije%20Republike%20Hrvatske%20za%20razdoblje%202016.%20-%202020..pdf>)
6. Act on Scientific Activity and Higher Education (OG 123/03, 198/03, 105/04, 174/04, 02/07, 46/07, 45/09, 63/11, 94/13, 139/13, 101/14, 60/15, 131/17, <https://www.zakon.hr/z/320/Zakon-o-znanstvenoj-djelatnosti-i-visokom-obrazovanju>)

### 4.1.3. Resources

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#### OBJECTIVE (C3)

Increase the level of self-sustainability of the Faculty's work.

#### MEASURES (M3)

1. Developmentally manage finances.
2. Secure ownership of premises and buildings.
3. Increase the number of employees in accordance with the increase of activities at the Faculty.
4. Invest in scientific-research laboratory and teaching infrastructure

#### ACTION PLAN (AP3)

1. Systematically invest funds in activities with large direct or indirect returns.
2. Continuously carry out activities aimed at expanding the space in all locations where the Faculty currently operates.
3. Continuously carry out modernization activities and procurement of new
4. research and teaching equipment.
5. Engage in the allocation of space on the Borongaj campus with the aim of encouraging research and technology transfer.
6. Continuously encourage new employment in accordance with the needs and secured funds.
7. Systematically reward employees.
8. Support development decision making with risk analysis.

#### COMPLIANCE WITH DOCUMENTS (UD3)

1. Spatial and Functional Development Strategy of the University of Zagreb 2013–2025 ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Javne\\_rasprave/Pet\\_strateskih\\_dokumenata\\_01.2014/Usvojene\\_strategije\\_2014/Ad\\_1\\_04\\_20140702\\_STRATEGIJA\\_prostornog\\_razvoja\\_konac\\_na.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Javne_rasprave/Pet_strateskih_dokumenata_01.2014/Usvojene_strategije_2014/Ad_1_04_20140702_STRATEGIJA_prostornog_razvoja_konac_na.pdf))
2. Education, Science and Technology Strategy (<https://mzo.gov.hr/UserDocsImages/dokumenti/Obrazovanje/Strategija%20obrazovanja,%20znanosti%20i%20tehnologije.pdf>)
3. Evaluation and quality assurance in the education system (<https://mzo.gov.hr/istaknute-teme/odgoj-i-obrazovanje/vrednovanje-i-osiguranje-kvalitete-u-sustavu-odgoja-i-obrazovanja/141>)
4. Self-analysis and documentation for the process of external independent evaluation of the quality assurance system of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/Studiji\\_studiranje/Studiji/Kvaliteta/Upravljanje\\_kvalitetom/Samoanliza\\_i\\_dokumentacija\\_zavajnsku\\_neovisnu\\_prosudbu.pdf](http://www.unizg.hr/fileadmin/rektorat/Studiji_studiranje/Studiji/Kvaliteta/Upravljanje_kvalitetom/Samoanliza_i_dokumentacija_zavajnsku_neovisnu_prosudbu.pdf))

## 4.2. INTERNAL STRATEGIC OBJECTIVES, MEASURES; ACTION PLAN AND COMPLIANCE WITH DOCUMENTS

### 4.2.1. Teaching activity

#### OBJECTIVE (C4)

Improve all levels of study and improve student support to increase their success, competitiveness in the labor market and comprehensive readiness to respond to the challenges of modern times.

#### MEASURES (M4)

1. Constantly improve teaching content.
2. Involve students in curriculum implementation.
3. Implement new pedagogical teaching methods and improve the grading system.
4. Improve methodologies of distance learning.
5. Expand the possibilities of experimental and practical learning.
6. Improve lifelong education and development.

#### ACTION PLAN (AP4)

1. Increase the interaction between the faculties of chemical engineering and the faculties of related professions in order to encourage cooperation, knowledge and experience of future engineers.
2. Plan the reorganization of space and business processes to enhance interdisciplinarity, collaboration, and networking among faculties, students, and alumni.
3. Continuously include scientific research at the Faculty in the curriculum and integrate theoretical and experimental learning.
4. Continuously encourage cooperation between institutes and research teams in launching new and interdisciplinary study programs.
5. Increase the number of elective courses in accordance with the required contents.
6. Gradually introduce the principles of a pedagogical approach with a limited hierarchy (learning based on teamwork, learning based on solving real problems, students teaching each other, etc.).
7. Increase the interactions of professors with students, and students with students.
8. Implement learning procedures in which the learning speed is adapted to the individual student.
9. Emphasize the values of academic free learning as a basis for intellectual progress and the fulfillment of personal objectives.
10. Continuously encourage students to think in an engineering and critical way.
11. Provide professional counseling in the early years of study for guidance.
12. Continuously encourage learning through practical work.
13. Enable the attendance of non-contact classes within the lifelong learning program.
14. Continuously encourage students to complete their studies on time.
15. Continuously encourage independent student activities and projects.
16. Ensure a pleasant stay for students at the Faculty.

## COMPLIANCE WITH DOCUMENTS (UD4)

1. Study Programs and Study Strategy of the University of Zagreb (2014 – 2025) ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Strategija\\_studija\\_i\\_studiranja.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Strategija_studija_i_studiranja.pdf))
2. Student Support Development Strategy of the University of Zagreb (2013 – 2025) ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Strategija\\_razvoja\\_podrske\\_studentima.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Strategija_razvoja_podrske_studentima.pdf))
3. Internationalization Strategy of the University of Zagreb 2014 – 2025 ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Startegija\\_Internacioanlaizacije.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Startegija_Internacioanlaizacije.pdf))
4. Strategy of the Quality Assurance System of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Strategija\\_sustava\\_osiguravnja\\_kvalitete.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Strategija_sustava_osiguravnja_kvalitete.pdf))
5. Croatia Education, Science and Technology Strategy (OG 124/2014-2364, [https://narodne-novine.nn.hr/clanci/sluzbeni/2014\\_10\\_124\\_2364.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2014_10_124_2364.html))

### 4.2.2. Scientific activity

#### OBJECTIVE (C5)

Publish highly influential and innovative scientific papers, and conduct not only scientific research related to local and regional challenges, but also scientific research that will contribute to improving the quality of life worldwide (green technologies, sustainable energy sources, Industry 4.0, economic growth, health, etc.).

#### MEASURES (M5)

1. Increase the number of competitive scientific projects.
2. Encourage the development of interdisciplinarity.
3. Connect knowledge and technologies through various disciplines and scientific fields.
4. Apply for scientific projects and initiatives that have a positive impact on the economy and employment.
5. Involve undergraduate and graduate students in research work on scientific and professional projects and other extracurricular activities.
6. Increase the visibility of the Faculty to the public as an important research institution in the field of green technologies, sustainable energy sources, industry 4.0.

#### ACTION PLAN (AP5)

1. Open new scientific fields that indirectly rely on chemistry, chemical engineering, materials engineering and environmental engineering.
2. Direct experienced researchers to areas considered key to the development and competitiveness of the Faculty.
3. Encourage partnerships at local, regional and international level
4. Strengthen the connection between the economy and the Faculty.
5. Develop infrastructure that will increase interdisciplinarity and competitiveness.
6. Develop a system of coordinated support for students who would be involved in work on professional and scientific projects.
7. Introduce research-oriented and project-oriented elective courses.

8. Continuously encourage students to apply for student projects.
9. Establish a computer center for digitization and Industry 4.0.
10. Continuously encourage computer solutions to engineering problems.
11. Continuously encourage the use of artificial intelligence.
12. Continuously promote scientific achievements to the general public through various media.

#### COMPLIANCE WITH DOCUMENTS (UD5)

1. Research, Technology Transfer and Innovation Strategy of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Javne\\_rasprave/Pet\\_strateskih\\_dokumenata\\_01.2014/2016\\_Strategija\\_istrazivanja\\_transfera\\_tehnologije\\_i\\_inovacija\\_Sveucilista\\_u\\_Zagrebu.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Javne_rasprave/Pet_strateskih_dokumenata_01.2014/2016_Strategija_istrazivanja_transfera_tehnologije_i_inovacija_Sveucilista_u_Zagrebu.pdf))
2. Internationalization Strategy of the University of Zagreb 2014 – 2025 ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Startegija\\_Internacioanlaizacije.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Startegija_Internacioanlaizacije.pdf))
3. Croatia Education, Science and Technology Strategy (OG 124/2014–2364, [https://narodne-novine.nn.hr/clanci/sluzbeni/2014\\_10\\_124\\_2364.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2014_10_124_2364.html))
4. Development Strategy of the Republic of Croatia "Croatia in the 21<sup>st</sup> Century" – Science (Other, OG 108/2003-1429, [https://narodne-novine.nn.hr/clanci/sluzbeni/2003\\_07\\_108\\_1429.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2003_07_108_1429.html))
5. Plan for the European Research Area: Implementation Plan of the Republic of Croatia for the period 2016 – 2020 (<https://mzo.gov.hr/UserDocsImages/dokumenti/Znanost/EIstrazivackiProstor/Plan%20implementacije%20Republike%20Hrvatske%20za%20razdoblje%202016.%20-%202020..pdf>)
6. Act on Scientific Activity and Higher Education (OG 123/03, 198/03, 105/04, 174/04, 02/07, 46/07, 45/09, 63/11, 94/13, 139/13, 101/14, 60/15, 131/17, <https://www.zakon.hr/z/320/Zakon-o-znanstvenoj-djelatnosti-i-visokom-obrazovanju>)

### 4.2.3. Knowledge and technology transfer

#### OBJECTIVE (C6)

Strongly integrate scientific research, teaching and the transfer of knowledge and technology in order to intensify cooperation with the economy based on innovation and academic entrepreneurship.

#### MEASURES (M6)

1. Transform the Faculty into a place that will be a center of creative thinking, innovation and entrepreneurship.
2. Encourage the transfer of acquired knowledge into innovations and finished products or applications, for their direct or indirect commercialization.
3. Capitalize on significant achievements to date in providing successful solutions to industry and the community, and create continuity of cooperation.
4. Enable students to create innovations by working on scientific and professional projects.
5. Promote the results of professional cooperation and innovation in the private sector.
6. Promote academic entrepreneurship that will attract students and professionals with experience.
7. Design measures to protect the intellectual rights of students, researchers and teachers.

**ACTION PLAN (AP6)**

1. Continuously create entrepreneurial teams that strive for innovation.
2. Periodically examine market opportunities to identify and support new ideas and innovations with a realistic opportunity for commercialization.
3. Increase innovation potential through strategic investment and support.
4. Increase work capacities for professional cooperation with the economy.
5. Create a reference list and catalog of possible products and services of the Faculty.
6. Comprehensively revise the curriculum so it is closely linked to market needs.
7. Include practical learning and entrepreneurship topics in most courses.

**COMPLIANCE WITH DOCUMENTS (UD6)**

1. Research, Technology Transfer and Innovation Strategy of the University of Zagreb ([http://www.unizg.hr/fileadmin/rektorat/O\\_Sveucilistu/Dokumenti\\_javnost/Dokumenti/Strateski\\_dokumenti/Izvjesca/Istrazivacka\\_strategija\\_verzija.pdf](http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/Izvjesca/Istrazivacka_strategija_verzija.pdf))
2. Center for Research, Development and Technology Transfer of the University of Zagreb (CIRTT) (<http://cirtt.unizg.hr/>)
3. Croatia Education, Science and Technology Strategy (OG 124/2014-2364, [https://narodne-novine.nn.hr/clanci/sluzbeni/2014\\_10\\_124\\_2364.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2014_10_124_2364.html))
4. Smart specialization strategy of the Republic of Croatia for the period from 2016 to 2020 and the Action plan for the implementation of the Smart specialization strategy of the Republic of Croatia in the period from 2016 to 2017 (Decision, OG 32/2016-853, [https://narodne-novine.nn.hr/clanci/sluzbeni/2016\\_04\\_32\\_853.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2016_04_32_853.html))
5. Innovation Strategy of the Republic of Croatia 2014 – 2020 (<http://europski-fondovi.eu/sites/default/files/dokumenti/Strategija%20poticanja%20inovacija%202014-2020.pdf>)
6. Croatia Education, Science and Technology Strategy (OG 124/2014-2364, [https://narodne-novine.nn.hr/clanci/sluzbeni/2014\\_10\\_124\\_2364.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2014_10_124_2364.html))
7. Communication from the Commission – Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (EU 2014/C 89/03, [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C\\_.2014.089.01.0003.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2014.089.01.0003.01.ENG))
8. Developing Frameworks to Facilitate University–Industry Technology Transfer. A Checklist of Possible Actions ([https://www.wipo.int/export/sites/www/policy/pdf/en/ui\\_checklist.pdf](https://www.wipo.int/export/sites/www/policy/pdf/en/ui_checklist.pdf))



## 4.3. EXTERNAL STRATEGIC OBJECTIVES, MEASURES, ACTION PLAN AND COMPLIANCE WITH DOCUMENTS

### 4.3.1. Green technology

#### OBJECTIVE (C7)

Direct the development of the Faculty towards green technologies based on modern principles of digitalization, Industry 4.0 and clean energy, and the postulates of the circular economy and sustainability of development.

#### MEASURES (M7)

1. Encourage the development of an industry based on climate neutrality.
2. Encourage research to develop new and improve existing renewable energy sources.
3. Encourage the processes of using used products and recycling useful raw materials from waste.
4. Develop processes that are not toxic for the environment.

#### ACTION PLAN (AP7)

1. Create a work environment sensitized to environmentally sustainable process engineering and green chemistry.
2. Continuously encourage applications for projects in the field of environmental engineering, sustainable development and green chemistry.
3. Continuously support and encourage industry in the transition to green technology.
4. Continuously assist the industry with the introduction of the circular economy.
5. Encourage the creation of a database of toxic pollutants in Croatia and their monitoring in the environment.
6. Continuously develop new environmentally friendly energy and energy-generating products production processes.
7. Continuously educate the public about the importance of green technologies and thus position the Faculty as a key institution in this area.

#### COMPLIANCE WITH DOCUMENTS (UD7)

1. Research and innovation to drive the Green Deal (<https://op.europa.eu/en/publication-detail/-/publication/a96cfbb5-5941-11eb-b59f-01aa75ed71a1/language-en/format-PDF/source-185507091>)
2. Research and innovation – Key contributor to the new EU climate adaptation strategy (<https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/336ae7b7-764f-11eb-9ac9-01aa75ed71a1>)
3. How the bioeconomy contributes to the European Green Deal (<https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/66722c8d-2e03-11eb-b27b-01aa75ed71a1>)

### 4.3.2. Digitization

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#### OBJECTIVE (C8)

Introduce the concept of operational excellence in the business processes of the Faculty using digital transformation, and strengthening the capacity needed to create digital innovations.

#### MEASURES (M8)

1. Improve teaching content in line with digitization.
2. Increase the efficiency of the implementation of all faculty processes by applying new applications.
3. Encourage the development of Industry 4.0.

#### ACTION PLAN (AP8)

1. Increase capacities for operational excellence and digital transformation in the implementation of all faculty processes.
2. Introduce new teaching content related to digitization, measurement and management of systems that is in line with Industry 4.0.
3. Introduce new digitized practical and laboratory content for students and teachers.
4. Support students and teachers in the use of digital technologies in teaching, research, innovation and administration.

#### COMPLIANCE WITH DOCUMENTS (UD8)

1. The European Digital Strategy – Shaping Europe’s digital future (<https://ec.europa.eu/digital-single-market/en/content/european-digital-strategy>)
2. Digital transformation ([https://ec.europa.eu/croatia/what\\_is\\_digital\\_transformation\\_changing\\_hr](https://ec.europa.eu/croatia/what_is_digital_transformation_changing_hr))
3. e-Croatia 2020 Strategy (<http://europski-fondovi.eu/sites/default/files/dokumenti/Strategija%20e-Hrvatska%202020.%20%2820.01.2016.%29.pdf>)

### 4.3.3. Social responsibility

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#### OBJECTIVE (C9)

Create working conditions in which students and employees can act ethically, transparently and sustainably and thus contribute to the community and the public good.

#### MEASURES (M9)

1. Promote high ethical principles and academic freedoms.
2. Direct activities towards the public good.
3. Create working conditions for the development of transparent and competitive scientific and professional activities.
4. Educate the public in the areas of green technologies and sustainable energy sources.

### ACTION PLAN (AP9)

1. Continuously motivate all stakeholders of the Faculty to create and support good practice and innovation with regard to social responsibility and sustainability.
2. Enable all students to freely research and solve scientific and professional challenges.
3. Systematically share new scientific and professional knowledge.
4. Increase the self-sustainability of the Faculty.
5. Encourage scientists to disseminate information to the public about new knowledge in the field of environmental protection, green ecologies and sustainable energy sources, and systematically organize educational workshops, lectures, public forums.

### COMPLIANCE WITH DOCUMENTS (UD9)

1. Social Entrepreneurship Development Strategy in the Republic of Croatia for the period from 2015 to 2020 (<http://www.esf.hr/wordpress/wp-content/uploads/2015/02/Strategija-razvoja-dru%C5%A1tvenog-poduzetni%C5%A1tva-u-RH-za-razdoblje-2015-2020.pdf>)
2. Guidelines for Universities Engaging in Social Responsibility ([https://www.iau-hesd.net/sites/default/files/documents/io8\\_guidelines\\_final\\_version\\_2017-09-12\\_print.pdf](https://www.iau-hesd.net/sites/default/files/documents/io8_guidelines_final_version_2017-09-12_print.pdf))
3. OECD, Corporate Social Responsibility ([https://ec.europa.eu/info/sites/default/files/recommendations-subgroup-corporate-social-responsibility\\_en.pdf](https://ec.europa.eu/info/sites/default/files/recommendations-subgroup-corporate-social-responsibility_en.pdf))
4. Corporate social responsibility (CSR) and its implementation into EU Company law ([https://www.europarl.europa.eu/RegData/etudes/STUD/2020/658541/IPOL\\_STU\(2020\)658541\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/658541/IPOL_STU(2020)658541_EN.pdf))



# 5. CONCLUSION – LOOKING TOWARD 2031

The implementation of the strategy will be under constant monitoring and evaluation, and the commitment to the realization of strategic objectives will ensure that the Faculty stably carries out its mission and systematically works to achieve its vision.





