1. Purpose and description of the subject

Industrial heritage includes any tangible remains from the technological and industrial past of the human civilisation. Apart from the architectural heritage, like abandoned factories and machines, this category includes auxiliary warehouses, means of transport and infrastructure, as well as workers' settlements. Intangible heritage represents most valuable evidence and a historical resource witnessing the industrial take-off.

A valid valorisation of industrial heritage started in the 1950s and from then we can follow the progress of industrial archaeology, a science dealing with the study of industrial heritage. After the new technologies pushed out the manufactures, steam plants and obsolete methods of production in the second half of the 19th century, the 20th century, to be more precise its final decades, were marked with a total collapse of old industries. In this period, many European industrial cities and villages became places of fallen industries, with abandoned factory facilities as their basic feature.

Today, industrial archaeology gains a very responsible task of research, valorisation, conservation, restoration and conversion of such industrial heritage. This highly-specialized science relies upon an interdisciplinary approach, considering the compact tangible and intangible evidence, oral testimonies, documents, items, machines and architectural remains through various scientific disciplines.

Industrial heritage, like cultural heritage in general, tells the story of men’s history. This particular heritage is mainly related to history of 18th, 19th and 20th century, depending on the geographic location. But most importantly, it paints a local, but also national and international social picture of a nation. The development of a country’s industry is connected to technical advancement and inventions, financial and economic progress (or setback), societal changes and urban development. It completes the picture of a society along with culture, art, tradition and other relevant factors that make a community.

Tackling industrial heritage means not only dealing with issues of progress and prosperity, but also with loss, failure – financial or otherwise, bad working conditions, economic crime, migrations and other. It is very important to deal with these issues because they are very often connected to the local community – some individuals or their ancestors may have been actors in mentioned changes.

In today's context, industrial heritage education not only covers the historical aspects of industrial heritage, but also, in and after the de-industrialization process, emerges as an active participant in the process of valorisation, recognizing the potential for reuse with the main idea of sustainability. The educational activities of the course will contribute to learning about the importance of this part of cultural heritage for the development, work, technological innovation, architectural heritage, social life, urban planning with the ultimate goal of recognizing the potential of reusing industrial architectural heritage today.

2. Educational objectives

- Based on the studying of the history of industrial heritage, by learning about basic
historical concept, students creates an intellectual framework by means of which they explain the complex picture of the world where the social, political, economic, technological and cultural processes are inseparable and interdependent. In this way they correlate the historical perspective with the current situation on the local, national and international level and understand the importance of the preservation of world, national and regional industrial heritage. Students are independent in their work, they are active and creative while trying to find possible solutions of current social-historical issues within their local communities, and discuss them by presenting arguments.

• By learning about local industrial plants and their ruins students become aware of the importance of the local community in the European and the world context. In such a way, students develop a positive attitude towards their own surrounding, they evaluate the effort made by both the institutions and individuals that actively deal with the questions of preservation and valorisation of industrial heritage, and assess individually positive and negative aspects of current situation. Students actively contribute to the solutions of current issues in their communities. By analysing the cases of conversion of industrial plants in the past and the examples of the revitalization of industrial plants in the world, students become capable of participating in the activities of local institutions, contribute to the solutions in an informed and legitimate way as well as spur the bodies of the local community to an active approach.

3. Structure
History Module

Industrial heritage is the topic impossible to study without its historical context. Understanding the interdependent political, social and economic guidelines that had an influence on processes in Europe and the world during the last three centuries is essential in order to understand the industrial phenomenon and its development at the local, national and international levels. The periods of the first and second industrial revolution changed the world in such a measure that the ways of life prior and posterior to them are almost incomparable. In order to assess the meaning and the potentials of industrial locations more efficiently, the students have to be acquainted with processes, actors and products that in the course of certain periods altered the way of production. By using basic historical concepts such as understanding the cause-effect relations, the analysis of
historical sources and the observation of continuity and change, the students gain knowledge, form attitudes and develop skills enabling them to be competent and participate in resolving current problems regarding the industrial heritage within their local communities.

The History Module is divided into two units

a) the historical development of industry on the world level, including the attitude towards the industrial heritage.

b) The evaluation of the processes of industrialization within a local community and its comparison with the processes at the international level.

It is important to point out that the two abovementioned units are not studied chronologically but are intertwined and studied simultaneously within topics and projects chosen.

Learning about the development of industry in the world includes the understanding of the preconditions of the first and the second industrial revolutions, the analysis of the ways in which these processes spread throughout Europe and the world, as well as the recognition of the consequences that appeared as the result of the industrialization. It is not only the question of the changes in the way of production, but we need to consider the far-reaching consequences influencing all aspects of the society, such as the status of the individuals in the society, the shift of balance in the field of politics and diplomacy and the changes of the way of life. Despite the indisputable progress that followed the modernization and the development of technology, the students develop critical thinking, pointing out negative influences too reflected upon some of the social groups.

On the other hand, students are interested in learning about local history because they can connect their personal experience with educational tasks. Very often they can find persons, within their families or narrow social surrounding, that were actors of crucial political events, making it possible for them to understand the issues on a much deeper level. By comparing the heritage of one's own home region with other regions and countries, they gain competences that enable them to become active participants in the society. In such a way the students, by studying history, become informed, capable and problem-aware citizens that can contribute to building a more prosperous future for themselves and their community, which is one of the fundamental tasks of modern European society.

b) Valorization Module

Although, by definition, valorisation (by valoir <lat. Valere: worth, valid) means valuation, especially used in the context of economics, as determining the value of property and property rights, when it comes to heritage, the term takes on a different meaning. In the context of the valorisation of cultural or industrial immovable tangible heritage, we are talking about determining the value of a particular building, not only
material but cultural, of importance at the national and local level, which may and may not have the potential of protection, and then the conversion, renovation, tourism presentations, interpretations. Module objectives and educational outcomes are intented to enable the students to become aware of this wider perspective and, along with the acquired skills, use it as a tool for more detailed valorization of the local and global cultural heritage.

On the other hand, the process of valorisation must also include the intangible parts of the heritage, as an integral, indivisible part of the heritage sites in a certain historical period. Intangible heritage is based on everything that was passed on to the people by the older generation, such as different skills, values, traditions, attitudes and ways of living, that shape not only those carrying it, but also the tangible heritage as well. Intangible cultural heritage is the crucial part of one's identity and, understanding both our own and the examples from different cultures, we build the path to intercultural dialogue and mutual respect. UNESCO characterizes intangible cultural heritage as traditional, contemporary and living at the same time while emphasizing that it can be a bridge between the past and the future (Izvor: donji link). In this sense, the stress of the module is on the gathering the information in the form of testimonies, experiences, attitudes and opinions, and try to perceive one's identity as dependent on these matters. Of course, that can be only achieved through the appropriate valorization and interpretation, as a first step to revitalization.

The meaning of the term revitalization refers to revival, restoring life, liveliness, rebirth. In the context of cultural heritage, it is important to use the possibility of that revival in all directions, in order to provide cultural heritage with a new purpose and a new life. In order to preserve the value of the inherited, we have to be able to do a lot more than a mere restoration. We also have to ensure the presence of new values in the inherited so that, one day, this would become a new inheritance. That is the domain in which the students can contribute greatly as, most often, they are the ones who carry such novelties to the society, probably those that will shape the future valorization.

c) Interpretation, tourism, urbanism module

Adaptive reuse is the conversion of a building, site or precinct from one use to another. Where the site being reused has heritage value the new use should support the ongoing interpretation and understanding of that heritage while also accommodating new functions. Adaptive reuse gives new life to a site, rather than seeking to freeze it at a particular moment in time. It explores the options that lie between the extremes of demolition or turning a site into a museum. Adding a new layer without erasing earlier layers, an adaptive reuse project becomes part of the long history of the site. The adaptive reuse of industrial heritage sites presents a wide range of opportunities and
challenges. Some of these are similar to those faced in the adaptive reuse of other heritage buildings and places. This module outlines a range of factors that may affect the adaptive reuse of industrial heritage. When beginning an adaptive reuse project it is important to start with a clear frame of reference and a coherent strategy for determining the heritage value of the building or site and ways to work with it. Students will be able to consider a meaningful decisions for new uses and approaches, when assessing what to keep, and what and how to change for the long-term management of the site. Students will challenge creative ways and opportunities in reuse process. Working collaboratively with experts is a significant factor in effectively realising the opportunities presented by industrial heritage sites. Heritage consultants, architects, landscape architects, engineers, contamination specialists and others will have much to offer, especially when working together. Students will have extensive experience with type of issues in reuse process if industrial heritage.

Industrial heritage sites play important roles in the lives of communities. They provide tangible links to the past and may have provided the livelihood of a substantial section of the community. Different communities and individuals value industrial heritage differently – for some industrial sites are a source of pride and bearers of important memories, for others they are an unsightly reminder of dilapidation and decline. The attitude taken depends on many things, including the structure itself, the social and political context, the recent history of the site and contemporary aesthetic mores. Heritage can make a strong contribution to social sustainability. Industrial heritage can also be important in creating new stories and identities as communities change and newcomers are integrated into an existing area. It is important to consider how to build contingency into a project so that it can accommodate change of all kinds while still respecting the site’s heritage. Community support is important for the ongoing effective reuse of industrial heritage sites. Community expectations about the value of such sites are not uniform and can change. Communication and community consultation is an important aspect of large urban regeneration projects. Industrial heritage sites can play important roles in urban regeneration, reinforcing urban character and identity. Reuse of such sites in a manner that is mindful of the urban context can also provide an opportunity to knit the urban environment together in new ways while making the heritage of the site legible.

d) Sustainable development module

Education for Sustainability involves equipping people with skills, capacity and motivation to plan and manage change towards sustainability within an organisation, industry or community. Furthermore, it aims to equip people to understand connections between environmental, economic, social and political systems. Finally, education for sustainability encourages individuals and groups to reflect upon personal experiences and worldviews, and challenges accepted ways of interpreting and engaging with the world.

Sve je veći broj znanstvenih dokaza o snažnom utjecaju ljudske populacije na prirodne sustave, kako danas tako i u prošlosti, a posebice nakon industrijskih revolucija. Kao direktna posljedica pojavilo se povećanje ekonomske nejednakosti pa mnogi ljudi
više ne mogu odlučivati o svojoj sudbini. Stoga je nužno da čovjek svoje djelovanje usklasti s načelima održivoga razvoja. U tome smislu Industrijska baština kao nastavni predmet ima odgovornost usmjeriti učenike prema korištenju baštine na održivi način.

There is an increasing amount of scientific evidence of strong human influence on ecological systems, both in the past and today, especially subsequent to industrial revolutions, resulting in growing economic inequality, making people's decisions about their own destiny impossible. It is therefore necessary to harmonize people's actions with the principles of sustainable development. Industrial heritage as a school subject aims at directing students towards the use of heritage in a sustainable manner.

Modul održivi razvoj kao dio predmeta Industrijska baština pruža učeniku spoznaje o potrebama suvremenog doba na globalnoj i lokalnoj razini te spoznaje o nužnosti održivog upravljanja industrijskim, prirodnim i društvenim dobrima, granici opterećenja, ljudskim potencijalima, osobnim i zajedničkim odgovornostima i pravima. Podržava razvoj generičkih vještina kao što su poduzetnost, inovativnost, kritičko mišljenje, sposobnost prilagodbe promjenama i sposobnost rješavanja problema.

Industrial heritage module provides the students with an awareness of the needs of contemporary era on both the global and the local level, as well as the awareness of the necessity of sustainable management of industrial, natural and social heritage, the tension limit, human potentials, personal and common responsibilities and rights. It supports the development of generic skills, such as entrepreneurship, innovation, critical thinking, the ability of adjusting to changes and the ability to resolve problems.

Primjenom se praktičnoga rada učenike potiče na ponašanja kao što su odgovorno korištenje prirodnih dobara i energije, racionalno postupanje s industrijskim otpadom, uporaba iskorištenih materijala, aktivan rad i suradnja u zajednici.

By means of doing practical work, students are encouraged towards the responsible use of resources and energy, rational management of industrial waste, the re-use of materials, active work and the cooperation within a community.

Nadalje, ovaj modul pridonosi razvoju osobnoga identiteta, prepoznavanju i poštivanju nacionalne industrijske, prirodne i kulturne baštine uz istodobno uvažavanje različitosti i drukčijih načina razmišljanja i življenja.

Furthermore, this module contributes to the development of personal identity, the recognition and respect of national industrial, natural and cultural heritage, at the same time taking into consideration all diversities, different ways of thinking and living.

Učenje i poučavanje modula Održivi razvoj nastoji podići svijest i prodbiti razumijevanje o svim pitanjima koja se odnose na održivot, pomaže učeniku kritički razmotriti moguća rješenja i načine djelovanja usmjerene na održivot, usklasti s tim ponašanje u svakodnevnome životu u školi i lokalnoj zajednici te njegovati vještine i osobine koje pridonose razvoju pravednoga društva.

Studyiing and teaching the Sustainable development module aims at raising the level and deepen the understanding of all questions that refer to sustainability, helps students to critically consider all possible solutions and the ways of actions directed to sustainability,
harmonize their behaviour at school and in the local community, and cultivate skills and qualities that contribute to the development of a just society.

### 4. Educational outcomes by cycles, modules and key content

#### 1st year of study

<table>
<thead>
<tr>
<th>Module History</th>
<th>Module Objectives</th>
<th>Outcomes:</th>
<th>Recommended activities:</th>
</tr>
</thead>
</table>


- Students evaluate the importance of Industrial improvement and its impact on modernization processes.

- Students evaluate the local history and compare the intensity of modernization in their region with the other European countries.

- Use local resources to explain origins and activities related to industrial revolution and development.

<table>
<thead>
<tr>
<th>Knowledge:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Analyse main causes of 1st industrial revolution</td>
</tr>
<tr>
<td>- Name the most important inventions, inventors and</td>
</tr>
<tr>
<td>- Explain the effects of technological improvement on social reforms</td>
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<tr>
<td>- Recognize interconnection of industrial development, education and scientific improvement on contemporary national movements</td>
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<tr>
<td>- Differentiate traditional and modern ways of production</td>
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<table>
<thead>
<tr>
<th>Skills:</th>
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</thead>
<tbody>
<tr>
<td>- Analyse historical industrial artifacts, sites, and landscapes</td>
</tr>
<tr>
<td>- Explain the social and cultural changes which occurred as an effect of industrialization</td>
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<tr>
<td>- Compare different approaches on industrial heritage through different historical periods</td>
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</table>

<table>
<thead>
<tr>
<th>Values</th>
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</thead>
<tbody>
<tr>
<td>- Evaluate the contribution of important historical figures from their region</td>
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<tr>
<td>- Recognize the importance of local history in international context</td>
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</tbody>
</table>

| - Analysing authentic historical texts |
| - Reenactment of production processes |
| - Mapping of industrial localities |
| - Visiting the authentic locations |
| - Elaboration on the relevant issues from the local community |
Key content:

- Causes of the 1st Industrial revolution and its influence on other aspects of life in 19th century
- Social, cultural and economic changes in European countries with a special concern for local region
- Local inventors, entrepreneurs and visionaries changing the life of our community
- The inventions from our region that changed the world

### Valorization Module

<table>
<thead>
<tr>
<th>Purpose of the module</th>
<th>OUTCOMES (knowledge, skills, attitudes)</th>
<th>Recommended activities</th>
</tr>
</thead>
</table>
| Students examine the condition of industrial heritage in their home region by means of the ICT and the field data acquisition and they categorize it and present the results textually, graphically and cartographically | **Knowledge:** making lists of the cultural heritage localities in the home region  
- analyse the physical condition of the objects of cultural heritage in the region and categorize them by means of the professional methodology  
- analyse space distribution and propose the regionalization of industrial heritage in their region  
- describe basic concepts and starting points crucial to understand the industrial | - take photos of the localities of industrial heritage of the region and make photo albums  
- make research into the purpose of the land use, the ownership and the planned activities of the spot of the industrial heritage by means of the ICT and publicly available documents (Urban plan and cadastre)  
- study various sources  
- interviews and lectures led by experts from |
Students differentiate, describe and analyse examples of good practice of converted industrial heritage as part of local and national identity.

- describe highly valuable solutions of conversion of the industrial objects in the existing urban plans

Skills:

- present the results through spoken reports and graphical annexes
- recognize the connection between the real and the painted space
- discuss the possibilities and advantages of connecting the entrepreneurship and the heritage

Attitudes

- analyse the work of a particular institution related to the preservation of industrial heritage
- evaluate the attitude of the state towards the heritage reflected in the laws on the preservation of the heritage

related fields
- based on the lectures, exercises, project and problem teaching, students understand the characteristics of the industrial heritage typical to the local, national and global examples and their contexts.
- make online leaflets on industrial heritage
- do research into the authentic sites and make individual works
Key contents:

Representative examples of technological localities, their preservation and the presentation of industrial heritage in Europe and the world

Research, presentations and evaluation of cultural and industrial heritage on the national and regional levels and the comparison with other countries

Social changes originating as a result of technological progress

Examples of good practice in the revitalization of industrial heritage on the European and world level

Activities of cultural and scientific institutions in the process of maintaining and converting the buildings and plants

Reuse Module

<table>
<thead>
<tr>
<th>PURPOSE OF THE MODULE</th>
<th>OUTCOMES (Knowledge, skills, attitudes)</th>
<th>Recommended activities</th>
</tr>
</thead>
</table>
| -Students express themselves creatively, motivated by the knowledge they acquired about industrial heritage | Knowledge:  
- analyse and explain the integration of industrial heritage as one of the promoters of the development of an area | Individual and team work in correlation with Art and/or on the basis of knowledge and skills gained from the field of figurative arts and knowledge about industrial heritage |
| | Skills:  
- develop the skills of managing the industrial heritage  
- create works by means of different techniques, forms of expression and media  
- apply knowledge on space | students as tourist guides promote the exploration of industrial heritage for the purposes of tourism, taking into account the principle of sustainability |
| Students develop management strategies of preservation and conversion of industrial heritage | | |

- Students express themselves creatively, motivated by the knowledge they acquired about industrial heritage

Knowledge:
- analyse and explain the integration of industrial heritage as one of the promoters of the development of an area

Skills:
- develop the skills of managing the industrial heritage
- create works by means of different techniques, forms of expression and media
- apply knowledge on space

Recommended activities

Individual and team work in correlation with Art and/or on the basis of knowledge and skills gained from the field of figurative arts and knowledge about industrial heritage

students as tourist guides promote the exploration of industrial heritage for the purposes of tourism, taking into account the principle of sustainability
resources development including four dimensions of sustainability – economic, social, environmental and cultural
- apply knowledge on urban planning as an interdisciplinary process
- analyse and explain the integration of industrial heritage as one of the promotors of the development of an area

**Attitudes:**
- creates and uses innovative and creative methods of action with the purpose of reaching sustainability

monitoring the changes and analysing graphical displays showing data on the world level as well as monitoring the changes of factors crucial for sustainable development.

Lectures held by experts in the field of management strategies
- visiting the industrial heritage sites in which students perceive the development of innovative approaches, the processes of the production of goods, their placement on the market and the realization of earnings within the regional economy
Key contents:

- Examples of industrial heritage conversion

- Methods, patterns and goals of industrial heritage conversion, generating benefits for local communities

- Methodologies and criteria of the selection of sites eligible for the re-use for economic or touristic purposes within the framework of local urban planning.

<table>
<thead>
<tr>
<th>Sustainable Development Module</th>
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<tbody>
<tr>
<td>PURPOSE OF THE MODULE</td>
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</table>
- understand and explain interdependent and changing nature of social, economic and ecological systems.

- discuss and consider the range of world views around social justice, values and ecosystems together with actions promoted by individuals and communities.

<table>
<thead>
<tr>
<th>Knowledge:</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>- recognize the effects of specific industries on the environment</td>
<td>- Analyse the indicators of the quality of life in a society and explain the differences between the societies.</td>
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<tr>
<td>- recognize changes in the local community caused by industrial work</td>
<td>- Compare the consequences of social differences in some societies, that emerged as consequences of the industrial development</td>
</tr>
</tbody>
</table>

- Explain the influence of human activities, industry and policies on the environment and the outcomes of the environmentally-friendly lifestyle.

- Does research into and makes presentations of advantages and disadvantages of industrial plants from their own area and the level of their influence on the environment.

<table>
<thead>
<tr>
<th>Attitudes:</th>
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</thead>
<tbody>
<tr>
<td>- Promote the awareness of the necessity of a balanced development of the economy and the environmental protection resulting in the personal improvement of an individual and at the same time the development of the society.</td>
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</tbody>
</table>

- Making projects which analyse the development of industrial branches through history and their influence on sustainable development

- Visiting areas where economic activities left their impact on the environment (quarries, forest exploitation, factories).

- Analysing the situation in different countries – the current situation and the best examples of public policies

- Visiting the institutions that aim at promoting environmental awareness and sustainable development

- Debate: The development of industry has a positive impact on the development of a society
<table>
<thead>
<tr>
<th>Key contents:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The influence of humans and economic activities on sustainable development</td>
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<tr>
<td>- Economic policies of the EU countries and their harmonization with the sustainable development</td>
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<tr>
<td>- Climate changes as a consequence of human activities</td>
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<tr>
<td>- Endangering plants and animal species</td>
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<tr>
<td>- Innovative solutions for current social and environmental problems in the local community and the world.</td>
</tr>
</tbody>
</table>
### 2nd year of study

<table>
<thead>
<tr>
<th>History Module</th>
<th>Outcomes:</th>
<th>Recommended activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modul objectives:</strong></td>
<td><strong>Knowledge:</strong></td>
<td>- Students valorise the technological innovation of 20th century and raise awareness of connection between economic development and political ideologies</td>
</tr>
<tr>
<td></td>
<td>- Students make research into local history and analyse contemporary social and cultural activities within their social surrounding</td>
<td>- Students describe main differences in everyday life in 19th and 20th century</td>
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<td></td>
<td></td>
<td>- Investigate authentic sites and evaluate their importance</td>
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<td></td>
<td>- Compare the intensity of industrialization in local area with international processes</td>
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<td></td>
<td><strong>Competence:</strong></td>
<td>- Interviewing people who were active participants in industrial history (factory owners, workers in particular factories, policy makers...)</td>
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<td></td>
<td>- Recognize the influence of economic reasons on political events and ideological changes caused by them</td>
<td>- Creating a scenario of alternative history</td>
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<td></td>
<td></td>
<td>- Support and argue in favour of activities that caused economic, social and cultural improvements in society</td>
</tr>
<tr>
<td></td>
<td><strong>Values:</strong></td>
<td>- Active participation in programs and activities in community that intend to improve cultural and industrial heritage</td>
</tr>
<tr>
<td></td>
<td>- Differentiate positive and negative effects of industrial development in the region</td>
<td>- Support the diversity of economy</td>
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<td></td>
<td>- Evaluate the importance of industrial branch on social stability of the state and local area</td>
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<tr>
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<td>- Support the diversity of economy</td>
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<tr>
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<td></td>
<td>- Criticise the role of historical figures with a significant influence on industry</td>
</tr>
</tbody>
</table>
Key content:
- Historical outline of the development of industry in the world
- A historical outline of industrial heritage re-use in the world and in a particular region
- Effects of 2nd Industrial revolution on political and social reforms
- Improvement of the quality of life as a consequence of technological development

<table>
<thead>
<tr>
<th>MODULE OBJECTIVES</th>
<th>OUTCOMES (Knowledge, skills, attitudes)</th>
<th>Recommended activities</th>
</tr>
</thead>
</table>
| - Students analyse and assess the value of their local industrial heritage in comparison with other cases | **Knowledge**  
- students recognize and describe the examples of good practice of valorization and revitalization on global, national and local levels.  
- analyse and apply the most appropriate methods for raising people's awareness of the industrial present and past **Skills:**  
- develop the skills that will enable a complete understanding and valorization of industrial heritage on local and national level within the European context | - establishing cooperation with other schools by participating in eTwining projects  
- participating in the activities of Erasmus+ projects.  
- studying different sources  
- research, documenting and site mapping ;  
- creating tables, graphs, photo albums  
- virtual travels through the sites |
| - Students analyse and apply methods of industrial heritage research | |
| -Estimate the representation of industrial heritage on lists, collections and historical data basis | |
- describes the historical framework of development of industri on the global, national and local levels.

**Attitudes:**
- develop positive attitudes and values towards the importance of industrial heritage

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**Key contents:**

- Industrial heritage in my town, country and in the world – physical condition, cultural and tourist valorization, symbology (comparative analysis)
- Revitalization of industrial heritage – local and international examples
- Intangible heritage – people's experiences and attitudes
- How to do research into industrial heritage – basic methodological principles
- Historical significance and future prospects of local heritage site – a case study
Re-use Module

<table>
<thead>
<tr>
<th>MODULE OBJECTIVES</th>
<th>OUTCOMES (Knowledge, skills, attitudes)</th>
<th>Recommended activities</th>
</tr>
</thead>
</table>
| Students create the development programmes for planning, sustainable revalorization and urban regeneration | **Knowledge:**  
- compare financial capacities of the bodies of local communities and actual funds needed for the revalorization of industrial heritage  
- Apply relevant techniques to ensure the integrity of the remains and their continuity into the future. | - organizing debates on the value of industrial sites for future generations |
| Students relate the importance and role of historical interpretations and research with the possibility of encouraging cultural tourism. | **Skills:**  
- argumenting pros and cons of certain methods of heritage preservation  
- encourage local government to tackle the industrial heritage issues and raise awareness of their importance and potentials within the local community. | - volunteering in organizations and institutions dealing with the revitalization of industrial heritage |
| | **Attitudes:**  
Estimate cultural, social, academic and economic possibilities of old industrial plants  
-estimate the importance and social responsibility to preserve local industrial heritage  
in a presentation of industrial heritage students estimate social benefits od the work done | - present their school and extra school work in real and digital environment |
| | | - Lectures held by experts in the field of management strategies |
| | | - Research-based learning - the students research into the possibilities of collecting financial means for the conversion and preservation of the structures of industrial heritage. |
Key contents:

- Revitalization of industrial heritage for commercial, cultural or residential purposes.

- A review and analyses of the cases of successfully revitalized sites

- Adaptive reuse of industrial heritage values

- Idea of long-term management of industrial heritage

- Exploring the approaches in the reuse process

- Understanding the idea of social sustainability

- Aspects of urban regeneration projects

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### Sustainable development module

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<th>MODULE OBJECTIVES</th>
<th>OUTCOMES (Knowledge, attitudes)</th>
<th>Recommended activities</th>
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- develop critical and reflective thinking processes in which students can design actions that will lead to a more sustainable future, which values social justice and equity.

**Knowledge**
- indicate the roles and responsibilities of all the levels of government, the economy and the citizens in the process of creating and applying the policies at both the local and the global levels.
- Analyze the ways of a good environmental attitudes and good attitudes towards other people in an effort to achieve the principle of sustainability
- Explain and look at their actions through the prism of industrial progress, exert influence on the society, the climate changes, ecological systems and other people

**Skills**
Apply sustainable solutions in their own lives, in order to reduce negative influences on the environment and the people.

Create proposals for the resource management in their own area in order to be able to cope with possible risks in the future

Recognize and use products produced in an environmentally friendly way.

- organize thematic learning day
- observe changes and analyze graphs and maps with data on the level of the world, as well as monitor changes essential for sustainable development (biodiversity, resource exploitation, poverty)
- measure the influence on the planet and the people, by means of the ecological footprint
- Volunteering and participation in humanitarian activities and social actions
- Applying good examples of sustainable development policies to local levels (neighbourhood, village, place, town, city, municipality, county, district, region)
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<tr>
<th><strong>Attitudes</strong></th>
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<td>- Promote actions of those branches of economy that are not harmful either to the planet or other people.</td>
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<tr>
<td>- Evaluate individual and community action that values local and global equity and fairness across generations and into the future.</td>
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<td>- Advocate the fair distribution and consumption of goods for the purpose of reducing social inequalities in the world</td>
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<td>- Promote the importance of citizens' participation in the processes of creation and execution of public policies.</td>
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Key contents:

- Sustainable production and consumption, the principles of sustainable production and consumption, political and economic systems

- Comparison of traditional and modern ways of production in various industrial branches

- Actions directed towards the future, examples of sustainable design

- Social entrepreneurship, cooperatives, citizen activism, global changes and processes

- Laws and contracts on the preservation of the environment and the topics covered by sustainable development, solidarity and equity

- Energy efficiency

5. Teaching and learning of interdisciplinary subject Industrial heritage

CORRELATION WITH OTHER SUBJECTS

Due to its specificity and a large spectrum of topics it covers, the subject Industrial heritage is connected with a lot of other subjects, sharing the contents, learning outcomes and teaching methods.

Apart from numerous common contents it shares with History, it also shares teaching methods as well as the development of basic historical concepts, such as the analysis of original contents and understanding of historical and spacial continuity. It correlates with Geography in the field of the study of industry, its influence on political and sociological affairs and the consequences it has on global trade and ecology.

What it shares with Art is the development of competences in visual and spacial orientation. Making students develop the capability of critical reading and writing as well as clear presentation of arguments, make it correlated with native language learning. With subjects such as Politics and economics, Philosophy and Logic, it holds the common goal to develop and foster critical thinking.

The above mentioned subjects are general knowledge subjects, sharing the most
similarities with the Industrial heritage in the sense of gaining specific knowledge, developing attitudes and acquiring intellectual competences, all of them the reasons why these subjects are mostly taught in high schools. On the other hand, there is a large number of subjects taught in various vocational schools having a lot in common with Industrial heritage, giving a possibility to establish a highly-successful correlation.

We have to point out technical and industrial schools, having a number of subjects correlating with Industrial heritage, with the main purpose of developing practical skills and competences in the first place. Therefore, Industrial heritage is a subject that can be taught and fulfill its purpose both in high schools and in vocational ones.
LEARNING AND TEACHING
Within the subject Industrial heritage, different teaching methods are applied, with the purpose of gaining knowledge, creating attitudes and developing skills explained in the previous chapters. It is crucial to stress the importance of modern teaching methods, fostering students to individual work, while the traditional teaching methods of oral presentations are reduced to a minimum. The students who learn individually during the educational process, take responsibility and actively contribute to the solutions of the problems. They will be able to make the decisions both about their private lives and the lives of their local communities in a more competent way. Methods fostering such the way of work are project tasks, research work as well as problem-based and experience-based learning. In such a way the traditional role of the teacher is reduced, while what is stressed are students’ interests and needs. The teacher, on the other hand, as the leader of the teaching process has the task to present the problem and the examples of former cases, but it is the students who have the key role in resolving current problems in cooperation with their colleagues, experts and people responsible in local institutions and local government.

MATERIALS AND SOURCES
The creation of high-quality, meaningfully connected structures of knowledge implies the application of different learning activities, such as, for example, research-based learning, cooperation-based learning, project-based learning, problem-based learning or field-based learning. These learning forms require the autonomous application of different learning materials, that are not limited exclusively to standard text-books and related materials, but include materials selected and created by both the teaches and the students in accordance with planned goals of every learning activity.

The use of the media has an extreme importance in teaching Industrial Heritage. Newspaper articles, research works and media reports enable the students a concrete insight into the problems and are an essential factor in modern teaching. Digital media such as the Internet and social networks additionally contribute to the quality of teaching and learning, enabling the students to get closer to their colleagues in other countries and foster the creation of international teams, that can be extraordinarily useful.

GROUPING STUDENTS AND TIME FRAME

Industrial heritage is the subject that presents challenging goals and requires a high degree of maturity and responsibility in students' work. It is therefore meant for intellectually mature secondary school students, who also possess a high degree of intrinsic motivation for this subject.

There are different ways of teaching Industrial heritage. Regarding the goals, methodology and educational possibilities, there two adequate options:
1. Interdisciplinary approach

In this variety Industrial heritage is not a separate subject, but is taught through subjects with similar contents and goals. These are in the first place History, Geography, Art and Politics and Economics, but it can also be correlated with some practical subjects in vocational schools. In this way the students become aware of the broadness of the topics that open within particular subjects, perceiving the complete picture and developing a divergent way of thinking.

2. Optional subject

This option has its advantages as well. Firstly, it is students' motivation, the subject being chosen only by students highly motivated for the achievement of the objectives set. Furthermore, the teachers are free to decide when and how to meet the objectives, which is very important while establishing the cooperation with institutions and experts.

Apart from that, the subject can be taught as a facultative subject, project-based teaching etc., in accordance with the possibilities and ambitions of a particular school.

EVALUATION

The evaluation in the subject Industrial heritage is a development process and is executed in accordance with the guidelines of European qualifications framework for lifelong learning, which means that it includes both formative and summative assessment of students' work.

Evaluation of the realization of educational outcomes denotes all proceedings by which the teachers will collect and analyse information on their students' achievements and their progress, as well as express professional estimates on learning and its outcomes, but also on the teaching efficiency. The main goal of the evaluation is to contribute to the improvement in learning and learning progress, that is why the formative evaluation (a reliable feedback about the students' expected progress or to what extent their progress towards the educational outcomes has been achieved) has an advantage over the summative assessment (grading).

Teachers have the autonomy and responsibility to choose the most appropriate evaluation methods and techniques, in accordance with the profile of the students and the school, as well as some particular situation factors. Methods and techniques chosen must enable documenting and evaluating both the learning outcomes and different levels of achievement. Students who showed deviations in the realization of learning outcomes should be provided with adequate learning support.

Elements of assessment
Critical thinking and drawing conclusions comprises factual, conceptual and procedural knowledge. Factual knowledge is essential for understanding the basic contents, however, the focus should be placed on conceptual and procedural knowledge, that will enable the application of knowledge in new situations as well as creative solutions to spacial problems.

Independent and research work includes independent research and skills such as observing, asking questions, planning; collecting information; recording, evaluating and presenting the data collected; interpretation and analysis of the data and reaching conclusions; communicating results and research procedures as well as the reflection skills.

**Creative approach**

refers to the independent solution of problem situations in an innovative way. On the basis of their own prior knowledge, developed attitudes and critical thinking, students propose their own solutions to current problems related to the topic of industrial heritage, but also to other social issues in their local communities.

At the end of the school year the final grade should express the overall adoption of learning outcomes, i.e. the student's understanding of the extent and the depth of the actions, phenomena and processes, conceptual and procedural knowledge. The conclusive grade derives from all the three equally important elements of assessment. It is determined on the basis of the achievement of learning outcomes, along with a continuous observation of the student's work and progress.