

## Competence objectives

Engineering education is of European and Finnish level 6 ([National reference framework](#)).

Competence area	Competence at level 6
<b>Knowledge</b>	Has a good command of comprehensive and advanced knowledge of his/her field, involving a critical understanding and appraisal of theories, key concepts, methods and principles. Understands the extent and boundaries of professional functions and/or disciplines.
<b>Skills and application</b>	Has advanced cognitive and practical skills, demonstrating mastery of the issues and the ability to apply knowledge and find creative solutions and applications required in a specialised professional, scientific or artistic field to solve complex or unpredictable problems.
<b>Responsibility, Management and Entrepreneurship</b>	Works independently in expert tasks of the field and in international co-operation or as an entrepreneur. Manages complex professional activities or projects. Can make decisions in unpredictable operating environments.
<b>Evaluation</b>	In addition to evaluating and developing his/her own competence, he/she takes responsibility for the development of individuals and groups.
<b>Self-development and Lifelong Learning</b>	Has the ability for lifelong learning. Considers communal and ethical aspects when dealing with different people in learning and working communities and other groups and networks. Communicates to a good standard verbally and in writing in his/her mother tongue both to audiences in the field and outside it. Communicates and interacts in the second national language and is capable of international communication and interaction in his/her field in at least one foreign language.

## Competencies

The competence profile of a Industrial Management engineer consists of general and degree-specific competencies. For the general competencies, Savonia University of Applied Sciences follows the recommendations of Arene (the Rectors' Conference of Finnish Universities of Applied Sciences).

Generic competences	Description of the competence at level 6
<b>Learning to learn</b>	<p>The graduating student recognises the strengths and development areas of their competence and learning methods, and they utilise the opportunities communities and digitalisation provide in their learning.</p> <ul style="list-style-type: none"> <li>• Assesses and develops their competence and learning methods in different learning environments.</li> <li>• Is able to acquire, critically assess and appropriately apply the national and international knowledge base and practices of their field.</li> <li>• Also takes responsibility for group learning and sharing what has been learned.</li> </ul>
<b>Operating in a workplace</b>	<p>The graduating student has versatile working life skills and is able to operate in work communities of their field.</p> <ul style="list-style-type: none"> <li>• Is able to work constructively in a work community and promotes their own and their work community's well-being.</li> <li>• Is able to act professionally in communication and interaction situations at a workplace.</li> <li>• Utilises the opportunities offered by technology and digitalisation in their work.</li> <li>• Understands the complexity of changing working life and their own resilience in changing working life situations.</li> <li>• Has capabilities for an entrepreneurial approach.</li> </ul>
<b>Ethics</b>	<p>The graduating student adheres to the ethical principles and values of their field of profession, taking the principles of equality and non-discrimination into account.</p> <ul style="list-style-type: none"> <li>• Is able to take responsibility for their own actions and their consequences and reflects on them in accordance with the ethical principles and values of their field.</li> <li>• Takes others into account and promotes equality and non-discrimination.</li> <li>• Take into account the realisation of diversity and accessibility in their actions.</li> </ul>

	<ul style="list-style-type: none"> <li>• Understands the principles of responsible conduct of research and adheres to them.</li> <li>• Is able to influence society based on ethical values.</li> </ul>
<b>Sustainable development</b>	<p>The graduating student is familiar with the principles of sustainable development, promotes their implementation and acts responsibly as a professional and a member of society.</p> <ul style="list-style-type: none"> <li>• Is able to use information related to their field in finding, implementing and establishing sustainable solutions and operating models.</li> <li>• Understands sustainability challenges, their interdependencies and the various aspects of issues and problems.</li> </ul>
<b>Internationality and multiculturalism</b>	<p>The graduating student is able to operate in multicultural and international operating environments and networks.</p> <ul style="list-style-type: none"> <li>• Is familiar with the impacts of their cultural background on their activities and is able to develop operating methods that take multiculturalism into account in their work community.</li> <li>• Is able to monitor and utilise the international development of their field in their work.</li> <li>• Is able to communicate internationally in their work tasks.</li> </ul>
<b>Proactive development</b>	<p>The graduating student is able to develop solutions that anticipate the future of their own field, applying existing knowledge and research and development methods.</p> <ul style="list-style-type: none"> <li>• Solves problem situations creatively and reforms operating methods together with others.</li> <li>• Is able to work in projects in cooperation with actors of different fields.</li> <li>• Is able to apply existing knowledge in the field in development and utilises re-search and development methods.</li> <li>• Is able to seek customer-oriented, sustainable and economically viable solutions, anticipating the future of their field.</li> </ul>

Specific competencies of Industrial Management engineer	Description of the competence
<b>Basic competencies of industrial management</b>	<ul style="list-style-type: none"> <li>• Is able to apply mathematics and physics in developing solutions in industrial environment</li> <li>• Understands the meaning of communication and what is needed to work in multicultural environments and organisations</li> <li>• Is able to apply office applications in a professional environment</li> <li>• Knows the fundamentals of software engineering and databases</li> </ul>
<b>Service dominant logic</b>	<ul style="list-style-type: none"> <li>• Understands and can apply service dominant logic thinking in work and industrial operations</li> <li>• Knows the basic concepts of service-oriented logic</li> <li>• Understands the basics of product- and service-oriented logic</li> <li>• Knows how to define the dimensions of quality according to service-oriented logic</li> </ul>
<b>Industrial company's operations and economy competencies</b>	<ul style="list-style-type: none"> <li>• Knows operation/functions of a modern industrial company</li> <li>• Understands the operations of an industrial company from the economic point of view</li> <li>• Is able to work and develop further skills in managing operations from idea to product and service, from production to customer and from production site to global markets</li> <li>• Applies principles of sustainability in work and industrial environments</li> </ul>
<b>Projects and managerial competencies</b>	<ul style="list-style-type: none"> <li>• Knows the generally accepted project management areas</li> <li>• Applies common project management processes, methods and techniques</li> <li>• Understands the importance of communication in project management</li> <li>• Understands and is able to work in different managerial environments and teamwork based organisations</li> </ul>