

## Master Thesis Brief Description

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<b>Thesis Title</b>	<b>Syngas production from natural gas and biomass</b>
<b>Programme of Studies</b>	MSc in Sustainable Energy Systems
<b>Course</b>	MES 580 Master Thesis
<b>Area of Study</b>	Sustainable Energy Technologies – Biofuels
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<b>Students Reg. Number</b>	14577
<b>Supervisor</b>	Dr.-Ing. Paris A. Fokaides, Ass. Professor, Mechanical Engineering Department
<b>Supervisory Committee</b>	Dr Chris Christodoulou, Professor, Mechanical Engineering Department Dr. George Karagiorgis, Professor, Mechanical Engineering Department
<b>Semester</b>	Fall Semester 2020
<b>Short Description</b>	<p>This final year project presents a comprehensive study on syngas production from a combination of natural gas and biomass using Aspen Plus simulation. Syngas, a valuable precursor for various chemical processes and clean energy production, is a promising alternative to fossil fuels. The research involves a detailed investigation of the gasification process, which converts both natural gas and biomass feedstocks into syngas.</p> <p>Through the utilization of Aspen Plus simulation software, various process parameters, such as feedstock compositions, gasifier operating conditions, and syngas production efficiency, were analyzed and optimized. The study aims to assess the feasibility and performance of syngas production using the integrated feedstock approach.</p> <p>The results and insights derived from this simulation-based study contribute significantly to the understanding of syngas production processes, enabling informed decision-making for industrial applications and the transition to sustainable energy sources. This research serves as a valuable reference for engineers, researchers, and policymakers seeking to explore greener and more efficient methods of syngas production from diverse and renewable feedstocks.</p>