

<b>Programme of “Servizi Generali di Impianto” “Plant Utility Management”</b>		
<ul style="list-style-type: none"> <li>• Code: I2G066</li> <li>• compulsory</li> <li>• second cycle 2nd year, 1<sup>st</sup> semester</li> </ul>		
<b>NUMBER OF ECTS CREDITS: 12 (WORKLOAD IS 120 HOURS; 1 CREDIT = 10 HOURS)</b>		
• Teacher: Pacifico Marcello Pelagagge		
<b>1</b>	<b>Course objectives</b>	<p>Whichever the industrial system there is necessity of several plant utilities, which is the main topic of the course for small, medium-size and big industry. Utilities provide to the plant, for example, compressed air, electric energy, transfer fluids, special fluids and water, moreover utilities manage the disposal of fluids and waste. The course deals with the definition of plant necessities, the interaction between the utility and the productive technology and the research of optimal solution for some common plant utilities. The evaluation of the proposed solution is evaluated by the analysis of both technic and economic points of view.</p>
<b>2</b>	<b>Course content and Learning outcomes (Dublin descriptors)</b>	<p>Topics of the module include:</p> <ul style="list-style-type: none"> <li>– Utilities general model</li> <li>– Utilities quantitative and qualitative feature</li> <li>– Utilities availability</li> <li>– Plant and utilities design &amp; building phases</li> <li>– Piping systems design</li> <li>– Vessel characteristics and design</li> <li>– Compressed air production and distribution</li> <li>– Thermal fluid utility and heat exchangers design</li> <li>– Water for industrial purposes</li> <li>– Mechanical and electrical device for fluid treatment</li> </ul> <p>ON SUCCESSFUL COMPLETION OF THIS MODULE, THE STUDENT SHOULD:</p> <ul style="list-style-type: none"> <li>– HAVE KNOWLEDGE OF PLANT UTILITIES GENERAL APPROACH</li> <li>– HAVE KNOWLEDGE OF THE UTILITIES OPTIMAL DESIGN METHODOLOGY</li> <li>– HAVE KNOWLEDGE OF SOME PARTICULAR AND WIDESPREAD PLANT UTILITIES</li> </ul>
<b>3</b>	<b>Prerequisites and learning activities</b>	<p>BEFORE THIS MODULE THE STUDENT MUST KNOW:</p> <p>INDUSTRIAL COST AND BASIC ELEMENT OF PROJECT EVALUATION</p> <p>FLUID DYNAMICS</p> <p>THERMODYNAMICS</p> <p>ELEMENTS OF MECHANICS OF SOLIDS</p>
<b>4</b>	<b>Teaching methods and language</b>	<p><b>Lectures will be in Italian</b></p> <p><b>Ref. Text books:</b></p> <p>LECTURE NOTES BY THE TEACHER (IN ITALIAN)</p> <p>Collana impiantistica, FRANCO Angeli</p> <p>F. Turco, Impianti INDUSTRIALI.</p> <p>A. Monte, Elementi impianti I E II.</p>
<b>5</b>	<b>Assessment methods and criteria</b>	<b>Oral exam</b>