

**Syllabus**  
**Course description**

<b>Course title</b>	<b>Descriptive Geometry</b>
<b>Course code</b>	97127 (ART) + 97099 (DESIGN)
<b>Scientific sector</b>	MAT/03
<b>Degree</b>	Bachelor in Design and Art (L-4)
<b>Semester</b>	Winter semester 2023/24
<b>Year</b>	Major in Art: 1 <sup>st</sup> year (enrolled 2023/24); 3 <sup>rd</sup> year (enrolled before 2022/23) Major in Design: 1 <sup>st</sup> year
<b>Credits</b>	6
<b>Modular</b>	No

<b>Total lecturing hours</b>	30
<b>Total hours of self-study and/ or other individual educational activities</b>	about 90
<b>Attendance</b>	not compulsory but recommended
<b>Prerequisites</b>	No prerequisites are foreseen.
<b>Maximum number of students per class</b>	Each group max 30

<b>Course description</b>	<p><i>The course belongs to the class "di base" in both majors in Art and in Design</i></p> <p>Descriptive Geometry course allows students of design and art to understand different scales and dimensions, appreciate objects in space, and know how it is represented technically in geometric space. The course will allow students to draw objects technically both by hand and digitally, by utilizing different methods of representation. Moreover, students will be exposed to different 2d patterns and ratios that could be developed into 3d objects.</p>
<b>Specific educational objectives</b>	<p><b>Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>- have acquired one's own work methodology in the field of Descriptive Geometry. This methodology includes the ability to oversee all phases of implementation, from the generation of ideas to the realisation of the finished project. Through the integrated teaching of different subjects, graduates will be able to simultaneously address all these aspects and consider them as synonymous with the development of a project that is successful on a formal and technical level.</li> <li>- The course seeks to offer a theoretical and practical</li> </ul>

	<p>method to:          Analysis of geometrical and mathematical models applied to the design field (perspective, axonometric projection, orthogonal projection, proportions);          achieve the ability to communicate and present an artifact to clients.</p>
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<b>Lecturer</b>	<p>Mustapha El Moussaoui          e-mail Mustapha.ElMoussaoui@unibz.it</p> <p>Webpage <a href="https://www.unibz.it/de/faculties/design-art/academic-staff/person/46595-mustapha-el-moussaoui">https://www.unibz.it/de/faculties/design-art/academic-staff/person/46595-mustapha-el-moussaoui</a></p>
<b>Scientific sector of the lecturer</b>	ICAR/13
<b>Teaching language</b>	English
<b>Office hours</b>	Monday & Tuesday 15:30 - 16:30
<b>List of topics covered</b>	<p>Object Study          Scales, Proportions and Ratios          Patterns          Orthogonal and Axonometric Projections          Perspectives          Handmade Technical Drawing          Digital Drawings          AI and Geometry</p>
<b>Teaching format</b>	Frontal lectures, individual and group exercises, outing exploration, personal research.

<b>Expected learning outcomes</b>	<p><b>Disciplinary competence</b></p> <p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>- have acquired the basic knowledge necessary to realise a project in the field of Descriptive Geometry;</li> <li>- have acquired the basic knowledge necessary for further Master's studies in all components of project culture as well as in technical subjects, with a particular attention to the field of Descriptive Geometry;</li> <li>- have acquired the necessary knowledge of digital drawing techniques digitally in Descriptive Geometry.</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>- use the basic knowledge acquired in the technical fields to realise a mature project;</li> <li>- make use of the skills acquired during the course of study in the event of continuing studies in a Master's degree programme and to develop them further;</li> <li>- be able to communicate ideas to clients adequately and clearly through drawings.</li> </ul> <p><b>Transversal competence and soft skills</b></p>
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	<p><i>Making judgements</i></p> <ul style="list-style-type: none"> <li>- Be able to make independent judgements for the purpose of developing their own design skills and in relation to all those decisions that are necessary to bring a project of Descriptive Geometry to completion.</li> </ul> <p><i>Communication skills</i></p> <ul style="list-style-type: none"> <li>- present an independently realised project in the field of Descriptive Geometry in the form of an installation, orally as well as in writing in a professional manner.</li> </ul> <p><i>Learning skills</i></p> <ul style="list-style-type: none"> <li>- have learned a work methodology at a professional level - in the sense of being able to identify, develop and realise solutions to complex problems by applying the acquired knowledge in the different fields, with a particular attention to the field of Descriptive Geometry</li> <li>- in order to start a professional activity and/or continue their studies with a master's degree programme;</li> <li>- have developed a creative attitude and learned how to enhance it and develop it according to their own inclinations;</li> <li>- have acquired basic knowledge in the field of Descriptive Geometry as well as a study methodology suitable for continuing studies with a Master's degree programme.</li> <li>- have learned the correlation between different hand techniques and digital techniques.</li> </ul>
<b>Assessment</b>	<p><i>By the exam's date, each student must upload on the Microsite of the faculty detailed documentation of the work done during the course.</i></p> <p><a href="http://portfolio.dsgn.unibz.it/wp-admin">http://portfolio.dsgn.unibz.it/wp-admin</a></p> <p><i>Documentation is an integral part of the exam. The documentation must include visual documentation and an abstract of the project.</i></p> <ul style="list-style-type: none"> <li>- Students are expected to fully analyze objects and learn how to represent them in 2d and 3d technical drawings. Accordingly, evaluation criteria will be based upon student's progress of understanding different scales and techniques during semester exercises</li> <li>- Students are expected to submit a final hardcopy portfolio of all the hand drawn exercises + a final pdf portfolio (which includes a scanned version of the hand drawn exercises + the digitally made drawings)</li> </ul>
<b>Assessment language</b>	The same as the teaching language
<b>Evaluation criteria and</b>	Evaluation criteria will be according to the following:

<p><b>criteria for awarding marks</b></p>	<ul style="list-style-type: none"> <li>- Communicating the object of choice into technical/digital drawings</li> <li>- The understanding of different scales, dimensions, and proportions</li> <li>- Neatness and presentation</li> </ul> <p>The final assessment is according to the following criteria:</p> <ul style="list-style-type: none"> <li>- Semester exercises assignments: 70% of final mark;</li> <li>- Final assignment: 30% of final mark</li> </ul> <p>Students must achieve the following skills:</p> <p>1- Related to semester assignments and final portfolio:</p> <ul style="list-style-type: none"> <li>-Ability in drawing techniques, composition, portfolio presentation and clarity of contents;</li> <li>-Respect of the deadline;</li> <li>-comprehension of theoretical and practical topics, related to geometry and its correct application to the assignments;</li> </ul> <p>2- Related to final project presentation:</p> <ul style="list-style-type: none"> <li>-Ability in team working;</li> <li>-Ability to correlate personal projects into the group project in a professional way;</li> <li>-Respect of the deadline.</li> </ul>
<p><b>Required readings</b></p>	<p>1- Goetsch, David L., Chalk, William S, and Nelson, John A. Technical Drawing. 5th ed. Clifton Park, NY: Autodesk, 2005. Print.</p> <p>2- Walsh, C. J. Engineering Drawing and Descriptive Geometry. Cambridge: Harvard UP, 2013. Web.</p> <p>Kim, Nam-ho, Kumar, Ashok V., Author, and Snider, Harold F., Author. Geometry of Design : A Workbook (2014). Web</p>
<p><b>Supplementary readings</b></p>	<p>1- Puma, Paola. Disegno Dell'architettura. Firenze: Firenze UP, 2003. Strumenti per La Didattica E La Ricerca. Web.</p> <p>2- Barbin, Évelyne., Menghini, Marta. Editor, Volkert, Klaus. Editor, Barbin, Evelyne, SpringerLink, and Springer-Verlag. SpringerLink. Descriptive Geometry, The Spread of a Polytechnic Art : The Legacy of Gaspard Monge (2019). Web.</p> <p>3- Tornincasa, Stefano., SpringerLink, and Springer-Verlag. SpringerLink. Technical Drawing for Product Design : Mastering ISO GPS and ASME GD&amp;T (2021). Web.</p> <p>4- Magnaghi-Delfino, Paola., Mele, Giampiero. Editor, Norando, Tullia. Editor, SpringerLink, and Springer-Verlag. SpringerLink. Faces of Geometry. From Agnesi to Mirzakhani (2020). Web.</p>