Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan
unibz

**Syllabus
Course description**

Course title	**Drawing 3D CAD Adanced**
Course code	97097
Scientific sector	INF/01
Degree	Bachelor in Design and Art (L-4)
Semester	1st semester
Year	2nd year
Credits	6
Modular	No

Total lecturing hours	winter semester 60
Total hours of self-study and/ or other individual educational activities	about 150
Attendance	not compulsory but recommended
Prerequisites	Non
Maximum number of students per class	30

Course description	*The course belongs to the class "caratterizzante" in the curriculum in Design.* The course Digital Design 3D CAD Advanced will introduce the students to the most emerging digital design techniques and methods for digital modeling through advanced operational tools. Aim of the course is to achieve the production and control of highly complex geometries and their representation. Students will use different techniques to produce innovative digital design and different topologies of geometries, including Meshes and NURBS, and their representation. The students will deepen the knowledge of digital design through an integrated system between designer and software, providing methods and techniques in which CAD tools become an integrated system with the designer, with the propose of generation, design, visualization, and production of advanced design geometries and providing the base for further studies and rapid prototyping.
Specific educational objectives	**Knowledge and understanding** - have acquired their own project methodology in the

field of 3D CAD. This methodology includes the ability to oversee all phases of design, from the generation of ideas to the realisation of the finished project. Through the teaching of subjects of a technical, nature, 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.

Lecturer	Cecilia Sannella, Office F3.04, e-mail Cecilia.Sannella@unibz.it, lecturer's page: https://www.unibz.it/en/faculties/design-art/academic-staff/person/38303-cecilia-sannella
Scientific sector of the lecturer	INF/01
Teaching language	English
Office hours	Thursday 10:00-11:00
List of topics covered	Advanced digital design, 3D modelling, visualization, Nurbs, Mesh, polygonal modelling, design strategies, rendering and postproduction
Teaching format	Frontal lessons based on handouts. The students will have studies to developed using the techniques learned. Desk critics during class and group review during the semester (PIN-UP).

Expected learning outcomes	**Disciplinary competence** *Knowledge and understanding* - have acquired the advanced technical knowledge in the field of 3D CAD necessary to realise a project. - have acquired the knowledge necessary for further Master's studies in the technical components of project culture – with a particular attention to the use of CAD tools. *Applying knowledge and understanding* - use the basic knowledge acquired in the technical field of CAD to realise a mature project. - make use of the skills acquired during the course of study in the event of continuing studies in a Master's degree programme in the field of design and to develop them further. **Transversal competence and soft skills** *Making judgements*

	- Be able to make independent judgements for the purpose of developing their own design skills and in relation to the technical decisions that are necessary to bring a project to completion. *Communication skills* - present an independently realised project through the application of 3D CAD skills in the form of an installation, orally as well as in writing in a professional manner. *Learning skills* - have learned a design methodology at a professional level – in the sense of being able to identify, develop and realise solutions to complex design problems by applying the acquired knowledge in the technical, in the fields of 3D CAD – in order to start a professional activity and/or continue their studies with a master's degree programme. - have developed a creative attitude and learned how to enhance it and develop it according to their own inclinations. - have acquired basic knowledge in the subjects of 3D CAD as well as a study methodology suitable for continuing studies with a Master's degree programme.

Assessment	*By the exam's date, each student must upload on the Microsite of the faculty detailed documentation of the work done during the course.* *http://portfolio.dsgn.unibz.it/wp-admin* *Documentation is an integral part of the exam. The documentation must include visual documentation and an abstract of the project.* Attending Students Final Exam at the end of the course. Oral and project work. Students must present the studies developed during the course and the final project. The exam will be oral with review questions to test knowledge application skills, evaluation of results. Non-attending Students Final Exam at the end of the course. Oral and project work. Students must present the studies developed during the course and the final project. The exam will be oral with review questions to test knowledge application skills, evaluation of results. Questions regarding notions and topics covered in

	the handouts and readings, question finalized to prove the knowledge and understanding of the topics covered during the course.
Assessment language	The same as the teaching language
Evaluation criteria and criteria for awarding marks	The final assessment is based on the content of all the exercises according to the following criteria: Attending and Non-attending One final mark Threshold: 18/30 Relevant for the course will be the ability to think critically and clear communicate the design strategies and processes. Problem solving. Apply complex transformation tasks, move independently between different platforms and topologies, control of highly complex geometries.

Required readings	Handouts of the different topics will be provided and loaded on the server in the course folder and/or on Microsoft Teams Attending students Recommended Non-attending students Mandatory
Supplementary readings	G.Lynn (1999), Animated Form, Princeton Architectural Press New York A.Menges – S. Ahlquist (2011), Computational Design Thinking, AD Reader L.Hovestadt, U. Hirschberg, O. Fritz (2020), Atlas of Digital Archtecture, Birkhäuser Supplementary reading will be loaded in the reserve collection and/or on the server and/or Microsoft Teams. (https://eu.alma.exlibrisgroup.com/leganto/readinglist/lists