Syllabus:
3D-Scanning and Printing
TU Berlin Winter University 2020

Week 1 January 6th -10th

	6	7	8	9	10
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	**Welcome Day!** Orientation 1st session: 3D LAB Introduction lecture and guided tour / workspace / equipment / software	Lecture 3D scanning / intro to GOM inspect	3D scans post processing with GOM inspect // 3D scanning	Presentation µCT and CT scanning an object	No class
11:00 - 12:30		3D scanning objects	3D scans post processing with GOM inspect // 3D scanning	CT scanning another object // 3D scanning // GOM inspect	Cultural Program
13:30 - 15:30		3D scanning objects	Cultural Program	CT scanning another object // 3D scanning // GOM inspect	
16:00 +					

Week 2 January 13th- 17th

	13	14	15	16	17
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Lecture 3D lab projects (museums, heart valves)	Excursion Leibniz Institute for Zoo and Wildlife Research (IZW)	Excursion Replica Workshop (Gipsformerei)	Blender / CAD	No class
11:00 - 12:30	Lectures: possibilities after scanning & design guidelines and printer capabilities: 3DP	Excursion Institute for Zoo and Wildlife Research (IZW)	Excursion Replica Workshop (Gipsformerei)	Blender / CAD	Cultural Program
13:30 – 15:30	Blender/CAD	Optional free time at the Zoo	Cultural Program	Blender / CAD	
16:00 +	Cultural Program				

Week 3 January 20th- 24th

	20	21	22	23	24
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Blender / CAD	3DP preparation / start 1st print 3DP	Blender / CAD for improvements /start 2nd print 3DP	lecture design guidelines and printer capabilities: SLS / powder preparation	No class
11:00 - 12:30	Blender / CAD	3DP post processing	3DP post processing	Blender / CAD	
13:30 – 15:30	Blender / CAD	3DP post processing	Cultural Program	Blender / CAD	
16:00 +	Cultural Program				

Week 4 January 27th-31st

	27	28	29	30	31
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	SLS preparation (preheat and pack)/start 1st print SLS	Blender / CAD for improvements /start 2nd print SLS	flexible time for scanning / 3D modeling	flexible time for scanning / 3D modeling	No class
11:00 - 12:30	SLS post processing	SLS post processing	flexible time for scanning / 3D modeling	CAVE presentation of works, time for documenting (photos)	Course Review
13:30 - 15:30	Blender / CAD	flexible time for scanning / 3D modeling	flexible time for scanning / 3D modeling	Cleaning	**Certificates Ceremony**
16:00 +	Cultural Program				

Key

Lecture	Field Trip or Practical	Assessment	Cultural Program activity*

*The cultural program timetable will be emailed to you shortly before your course starts. For more information about the cultural program, and for examples of previous schedules, head here: https://www.tu-berlin.de/menue/summer_university/cultural_program/

Further information on assessments
The course will focus on 3D-printing and 3D-scanning. Basic experience with CAD-software (such as Rhino, Solid Works, 3D Studio Max or blender) is as well requested as a capability as the use of personal laptops. Participants are requested to select an object for 3D-scanning.

Further Information on excursions
As the 3D-Lab hosts all needed equipment, no course-related excursions are scheduled.

Assessment information

You will be assessed in the following ways (see yellow sessions in schedule, if applicable):

- Presentation of first prototype
- Presentation of pre-final prototype
- Final presentation

Your assessments will be weighted as follows:

- Presentation of first prototype 20 %
- Presentation of pre-final prototype 20 %
- Final presentation 60 %

Grading information

All participants of the TU Berlin Summer & Winter University are required to select their grading option at the time of registration. The two options available are (i) graded or (ii) pass/fail.

All participants who select option (i) graded, will receive a grade under the German grading system. The following table provides an overview of the grading system and equivalent scores for international credit transfers:

Total mark	German grade	English description
More or equal to 95	1,0	Excellent
More or equal to 90	1,3	Very good
More or equal to 85	1,7	Good
More or equal to 80	2,0	Good
More or equal to 75	2,3	Good
More or equal to 70	2,7	Satisfactory
More or equal to 65	3,0	Satisfactory
More or equal to 60	3,3	Satisfactory
More or equal to 55	3,7	Sufficient
More or equal to 50	4,0	Sufficient
Less than 50	5,0	Failed

Credit Points

ECTS is a point system and European standard developed by the Commission of the European Community. ECTS stands for European Credit Transfer System. The aim is to provide common procedures and guarantee academic recognition of studies abroad. The credit system is based on student workload. All lectures, seminars, excursions and homework count towards the workload. One point is awarded for the equivalent of 25-30 hours of workload.

Reading list

Here are reading materials which will be used or referred to during the course. You are not required to read these in advance – this is for your information and reference.
All sources below are available either open source, in the TU Berlin library, or will be provided to you directly by your lecturers, during the course.

To search resources available in the TU Berlin library, check here: https://www.ub.tu-berlin.de/en/searching-for-resources/