

Syllabus: Space Robotics

TU Berlin Summer University 2019 Term 3

Week 1 July 22nd-26th

	22	23	24	25	26
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Welcome Day! Room tbc, building tbc 10:30: Orientation session 12:30-13:15: Buffet lunch 13:30-15:30: First class session 15:30-16:15: Campus Tour 16:15-16:45: Coffee & Cake	Introduction to Space Robotics	Introduction to electronics systems	Introduction to ROS programming	No class
11:00 - 12:30		Introduction to Space Robotics and short tour	Introduction to electronics systems	Introduction to soldering and using workshop tools	Cultural Program
13:30 - 15:30		Project work: Planning the Rover Mission	Cultural Program	Introduction to soldering and using workshop tools	
16:00 +					

Week 2 July 29th- August 2nd

	29	30	31	1	2
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Introduction to electronics measuring	Introduction to ROS programming	Rover Subsystems	Rover Subsystems	No class
11:00 - 12:30	Introduction to electronics measuring	Introduction to embedded programming	Project work: Rover Mission Design	Introduction to relevant ROS packages	Cultural Program
13:30 - 15:30	Project work: Rover Mission Design	Project work: Rover Mission Design	Cultural Program	Project work: Rover Mission Design	
16:00 +	Cultural Program				

Week 3 August 5th- 9th

	5	6	7	8	9
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Introduction to relevant ROS packages	Introduction to testing	Project work: Rover Mission Design	Project work: Rover Mission Design	No class
11:00 - 12:30	Introduction to relevant ROS packages	Project work: Rover Mission Design	Project work: Rover Mission Design	Project work: Rover Mission Design	
13:30 - 15:30	TU Berlin Planetary Rovers	Project work: Rover Mission Design	Cultural Program	Project work: Rover Mission Design	
16:00 +	Cultural Program				

Week 4 August 12th-16th

	12	13	14	15	16
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 - 10:30	Project work: Rover Mission Design	Project work: Rover Mission Design	Test Campaign	Rover Mission Competition	No class
11:00 - 12:30	Project work: Rover Mission Design	Project work: Rover Mission Design	Test Campaign	Rover Mission Competition	No class
13:30 - 15:30	Project work: Rover Mission Design	Project work: Rover Mission Design	Presentation	Rover Mission Competition	Certificates Ceremony
16:00 +	Cultural Program				Lichthof, 1 st floor, TU Berlin main building

Key

Lecture	Field Trip or Practical	Assessment	Cultural Program activity*
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*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/

Assessment information

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

- Project presentation on 14.08.19

- Project demonstration on 15.08.19

Your assessments will be weighted as follows:

- Project presentation 40% (group assessment)
- Project demonstration 60% (group assessment)

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/>

1. Planetary Rovers, Alex Ellery
2. ROS wiki page <http://wiki.ros.org/>
3. Make: Electronics, C. Platt
4. Arduino Cookbook, M. Margolis
5. Python programming fundamentals, Kent D. Lee