Technische Universität Braunschweig

Datum: 12. September 2023

Module One

Materials and Processes in Additive Manufacturing

WiSe 2023/24

Time: Thursdays from 08:00 to 09:30

Place: BE 52.4 (Seminarraum Baustoffe)

Supervisor: David Böhler M. Sc.

Office hours: by arrangement

Date	Lecture	Lecturer
26.10.2023	Course Introduction	Böhler/ Khader
02.11.2023	Additive Fertigung im Bauwesen, Klassifizierung, Beispiele & Vision	Lowke
09.11.2023	Selective Paste Intrusion	Böhler
16.11.2023	Selective Cement Activation	Herding
23.11.2023	Large Particle 3D Concrete Printing	Böhler
30.11.2023	Ablegende Verfahren: Shotcrete 3D Printing & Extrusion	Freund
07.12.2023	Thixotroper Strukturaufbau bei ablegenden 3D-Druckverfahren	Lowke
14.12.2023	Bewehrungskonzepte für die Additive Fertigung	Freund
21.12.2023	entfällt	-
Weihnachtsferien vom 23.12.2023 bis 07.01.2024		
11.01.2024	Injection 3D Concrete Printing	Mai
18.01.2024	3D-Lehmdruck (Englisch)	Dorresteijn
25.01.2024	Lichtbogenbasierte additive Fertigung	Hensel
01.02.2024	Baupraktische Anwendung (digital)	Meyer-Brötz
08.02.2024	Baurechtliche Zulassung	Weger

Module Two

Methods of Digital Fabrication

WiSe 2023/24

Task: Group Work

Place: BE 52.4 (Seminarraum Baustoffe) + Modelbauwerktstatt

Supervisor: Noor Khader M. Sc.

Office hours: by arrangement

Calender Week	Date & Time	Topic	Supervisor
CW 44; 45; 46		Digital Skill Building Workshop (Rhino, Grasshopper and Robotic Control)	Khader
CW 44	Thurs, 2.11.23 (10:00 - 13:00)	Rhino Introduction	
	Frid, 3.11.23 (09:00 – 12:00)	Rhino + Grasshopper Introduction	
CW 45	Thurs, 9.11.23 (10:00 – 13:00)	Grasshopper	
	Fri, 10.11.23 (09:00 – 12:00)	Grasshopper + Robotic Control	
CW 46	Thurs, 16.11.23 (10:00 - 13:00)	Robotic Printing	
	Fri, 17.11.23 (09:00 – 12:00)	Robotic Printing	
CW 47	Thurs, 23.11.23 @9:45 am	Final Presentation Review	Khader / Hack / Böhler

Module Three

Applied Additive Manufacturing – Deep Dive

WiSe 2023/24

Task: Group Work

Location*: BE 52.4 (Seminarraum Baustoffe) / Modelbauwerkstett (ITE)

* The location depends on the group work chosen.

Supervisor: David Böhler M. Sc. / Noor Khader M. Sc.

Office hours: By arrangement

Calender Week	Topic	Lecturer
CW 48:	Lab work: SCA & concrete extrusion at iBMB and clay extrusion at ITE. (approx. 3 lab days per group in the week)	Böhler / Freund / Herding / Khader
CW 49:	Laboratory work: further investigations (approx. 1 laboratory day per group in the week)	Böhler / Freund / Herding / Khader
CW 50 – CW 51	Independent group work (Evaluation of the results, preparation of the literature research as well as final presentation)	-
Christmas holidays from 23.12.2023 to 07.01.20		
CW 1 – CW 3	Independent group work (Evaluation of the results, preparation of the literature research as well as final presentation)	-
CW 4 25.01.24 9:45 - 13:00	Final presentations of the individual groups	Böhler / Freund / Herding / Khader / Hack

Modules Recap

Final Overall Course Examination/Submission

Calender Week	Topic
CW 9 29.2.24	Portfolio (for the Architectural Students) Written Exam (for the Engineering Students)

Timeline:

	Calender Week	Course Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Oct	43	1	23	24	25	26 Introduction Lecture	27	28	29
Nov	44	2	30	31 Reformation Day	1	2 Lecture	3 Digital Skill Modelling Workshop	4	5
	45	3	6 Module 2 - Digital Skill Building	7	8	9 Lecture	10 Digital Skill Modelling Workshop	11	12
	46	4	13 Module 2 - Digital Skill Building	14	15	16 Lecture	17 Robotic Prototyping	18	19
	47	5	20 Module 2 - Digital Skill Building	21	22	23 Lecture Mid Review	24	25	26
	48	6	27 Module 3 - Deep Dive	28	29	30 Lecture Review	1	2	3
Dec	49	7	4 Module 3 - Deep Dive	5	6	7 Lecture	8	9	10
	50	8	11 Module 3 - Deep Dive	12	13	14 Lecture Review	15	16	17
	51	9	18 Module 3 - Deep Dive	19	20	21 Lecture	22	23	24
	52		25 Christmas Holiday	26	27	28	29	30	31
	1		1 Christmas Holiday	2	3	4	5	6	7

Further details can be obtained from Ms Noor Khader, ITE (n.khader@tu-braunschweig.de)