

Geometri / Geometry

About the course

subject	Matematik
activitytype	master course
Teaching language	English
Registration	Please register via stads-self-service within the registration period announced here: https://intra.ruc.dk/en/students/student-hub/student-hub-find-the-answers-to-your-administrative-questions/ Tilmelding via stads selvbetjening Indenfor den annoncerede tilmeldingsperiode, som du kan se her: https://intra.ruc.dk/dk/for-studerende/student-hub/studieadministration/
Learning outcomes/ Assessment criteria	After completing the course the student has obtained Knowledge of General properties of regular curves and surfaces in $\mathbb{R}^3$ Notions of Curvature for regular surfaces in $\mathbb{R}^3$ Abstract differential geometry Examples of concrete surfaces Skills in Mastering differential geometric concepts, ideas and entities Correct use of the mathematical formalism, including the relevant notation, symbols and syntax Reading, understanding and conducting proofs within a differential geometric setting Applying mathematical analysis and linear algebra in differential geometry Competences to Apply mathematical thinking in relation to geometric structures and problem solving Understand, evaluate and conduct mathematical reasoning and proofs in geometry Decode, interpret, distinguish and connect different mathematical representations, in particular geometric and algebraic representations Understand, formulate, formalize and solve problems in differential geometry Read and understand mathematical texts on differential geometry and communicate professionally both written and orally Apply numerical tools to investigate, solve and communicate differential geometric problems
Overall content	Fundamental elements of differential geometry: • Regular curves in $\mathbb{R}^3$ • Regular surfaces in $\mathbb{R}^3$ • Notions of Curvature for regular surfaces and their relations • Abstract surfaces and Riemannian metrics • Concrete surfaces
Detailed description of content	Lectures and problem sessions including class room discussions and minor student presentations.
Teaching and working methods	Lectures and problem sessions including class room discussions and minor student presentations.
Course material and Reading list	The course will cover Chapters 5-13 in : John McCleary, Geometry from a Differential Viewpoint, Second Edition, Cambridge University Press 2013, ISBN 978-0-521-13311-1 (Paperback) or ISBN 978-0-521-11607-7 (Hardback) We shall occasionally refer to William R. Wade : An introduction to Analysis, Fourth Edition, Pearson Prentice Hall, 2010, ISBN 978-0-13-615370-2. You may benefit from consulting other sources, e.g.: Andrew Pressley, Elementary Differential Geometry, Springer 2010, SUMS, ISBN 978-1-84882-890-2. and Manfredo P Do Carmo, Differential Geometry of Curves and Surfaces, Prentice Hall 1976, ISBN 978-0132125895.
Form of examination	30 minutes oral examination, including voting based on a take-home question. the take-home question is handed out 72 hours prior to the oral examination. the examination is opened by the

student giving a presentation of duration max. 10 min. addressing the question. after this, the student is questioned in the general curriculum for another 15 minutes.

all aids are allowed.

date: Submission of the take-home question 09/01-18 at 09:00 oral exams are on the 12th of jan.

Form of re-examination	as ordinary examination. Information regarding sign up for the re-exam will be announced through moodle as we progress towards the date.	
Examination type	Individual examination	
Exam aids	all	
Assessment	7-point grading scale	
Moderation	External (i.e. course lecturer and an external examiner assess)	
Evaluation- and feedback forms	See the section on exam	
Responsible for the activity	Carsten Lunde Petersen (lunde@ruc.dk)	
teacher	Carsten Lunde Petersen (lunde@ruc.dk)	
Administration of exams	INM Studieadministration (inm-studieadministration@ruc.dk)	
STADS stamdata	Obligatorisk kursus workload : 10 ECTS exam form : oral	activitycode : U40460 grading : 7-point grading scale censorship : external censorship

Course days:

Hold: 1

1. kursusgang

time 04-09-2017 13:15 til
 04-09-2017 15:00

location 27.1-152 - lokale 2 (20)

2. kursusgang

time 06-09-2017 08:15 til
 06-09-2017 10:00

location 27.1-152 - lokale 2 (20)

3. kursusgang

time 11-09-2017 13:15 til
11-09-2017 15:00

location 27.1-152 - lokale 2 (20)

4. kursusgang

time 13-09-2017 08:15 til
13-09-2017 10:00

location 27.1-152 - lokale 2 (20)

5. kursusgang

time 18-09-2017 13:15 til
18-09-2017 15:00

location 27.1-152 - lokale 2 (20)

6. kursusgang

time 20-09-2017 08:15 til
20-09-2017 10:00

location 27.1-152 - lokale 2 (20)

7. kursusgang

time 25-09-2017 13:15 til
25-09-2017 15:00

location 27.1-152 - lokale 2 (20)

8. kursusgang

time 27-09-2017 08:15 til
27-09-2017 10:00

location 27.1-152 - lokale 2 (20)

9. kursusgang

time 02-10-2017 13:15 til
02-10-2017 15:00

location 27.1-152 - lokale 2 (20)

10. kursusgang

time 04-10-2017 08:15 til
04-10-2017 10:00

location 27.1-152 - lokale 2 (20)

11. kursusgang

time 09-10-2017 13:15 til
09-10-2017 15:00

location 27.1-152 - lokale 2 (20)

12. kursusgang

time 11-10-2017 08:15 til
11-10-2017 10:00

location 27.1-152 - lokale 2 (20)

13. kursusgang

time 13-10-2017 10:15 til
13-10-2017 12:00

location 27.1-152 - lokale 2 (20)

14. kursusgang

time 16-10-2017 13:15 til
16-10-2017 15:00

location 27.1-152 - lokale 2 (20)

15. kursusgang

time 18-10-2017 08:15 til
18-10-2017 10:00

location 27.1-152 - lokale 2 (20)

16. kursusgang

time 20-10-2017 10:15 til
20-10-2017 12:00

location 27.1-152 - lokale 2 (20)

17. kursusgang

time 23-10-2017 13:15 til
23-10-2017 15:00

location 27.1-152 - lokale 2 (20)

18. kursusgang

time 25-10-2017 08:15 til
25-10-2017 10:00

location 27.1-152 - lokale 2 (20)

19. kursusgang

time 27-10-2017 10:15 til
27-10-2017 12:00

location 27.1-152 - lokale 2 (20)

20. kursusgang

time 30-10-2017 13:15 til
30-10-2017 15:00

location 27.1-152 - lokale 2 (20)

21. kursusgang

time 01-11-2017 08:15 til
01-11-2017 10:00

location 27.1-152 - lokale 2 (20)

22. kursusgang

time 03-11-2017 10:15 til
03-11-2017 12:00

location 27.1-152 - lokale 2 (20)

23. kursusgang

time 06-11-2017 13:15 til
06-11-2017 15:00

location 27.1-152 - lokale 2 (20)

24. kursusgang

time 08-11-2017 08:15 til
08-11-2017 10:00

location 27.1-152 - lokale 2 (20)

25. kursusgang

time 10-11-2017 10:15 til
10-11-2017 12:00

location 27.1-152 - lokale 2 (20)

26. kursusgang

time 17-11-2017 10:15 til
17-11-2017 12:00

location 27.1-152 - lokale 2 (20)

27. kursusgang

time 20-11-2017 13:15 til
20-11-2017 15:00

location 27.1-152 - lokale 2 (20)

28. kursusgang

time 22-11-2017 08:15 til
22-11-2017 10:00

location 27.1-152 - lokale 2 (20)

29. kursusgang

time 04-12-2017 13:15 til
04-12-2017 15:00

location 27.1-152 - lokale 2 (20)

30. kursusgang

time 06-12-2017 08:15 til
06-12-2017 10:00

location 27.1-152 - lokale 2 (20)

32. kursusgang

time 08-12-2017 10:15 til
08-12-2017 12:00

location 27.1-152 - lokale 2 (20)

33. kursusgang

time 11-12-2017 13:15 til
11-12-2017 15:00

location 27.1-152 - lokale 2 (20)

34. kursusgang

time 13-12-2017 08:15 til
13-12-2017 10:00

location 27.1-152 - lokale 2 (20)

35. kursusgang

time 15-12-2017 10:15 til
15-12-2017 12:00

location 27.1-152 - lokale 2 (20)

36. kursusgang

time 18-12-2017 13:15 til
18-12-2017 15:00

location 27.1-152 - lokale 2 (20)

STADS Obligatorisk kursus
stamdata workload : 10 ECTS
exam form : oral

activitycode : U40460
grading : 7-point grading scale censorship : external censorship