

June 13, 2023  
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## Advanced Topics in Geometry F1 (MTH.B506)

### Course Syllabus

#### Important Pointers:

- <http://www.math.titech.ac.jp/~kotaro/class/2023/geom-f1> (official web)
- <http://www.official.kotaroy.com/class/2023/geom-f1> (a mirror)
- <https://t2schola.titech.ac.jp/> (T2SCHOLA)

**Lecture:** Tuesdays 10:45–12:25, Lecture hall M-143B

**Lecturer:** Kotaro Yamada (Dept. Math.); kotaro@math.titech.ac.jp

**Course Description:** Definition and meanings of the “curvature” of Riemannian manifolds, especially those obtained as submanifolds of (pseudo) Euclidean space, are introduced.

**Student learning outcomes:** Students are expected to know the integrability condition of linear system of partial differential equations, the sectional curvature of a Riemannian manifolds, the curvature as an integrability condition, and the local uniqueness of Riemannian manifolds of constant sectional curvature.

**Textbooks:** No textbook is set. Lecture note will be uploaded on T2SCHOLA within the previous day of each class.

#### Grading Policy:

- Graded by weekly homeworks.
- Each homework consists of (1) a problem on the topics in the lecture (up to 2 points), and (2) to present a question on the contents of the lecture, or to point out error(s) in the lecture note/the lecture (up to 3 points).
- Each homework should be submitted to T2SCHOLA by 10:00 on the following Thursday of the lecture, as an pdf file in the format of the *homework sheet* (which can be downloaded from the folder “Homework Sheet” on T2SCHOLA). *Japanese is acceptable.*
- Questions, requests and comments (and the answers, lecturer’s comments) will be disclosed on the following class.