

April 09, 2019  
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## Advanced Topics in Geometry A1 (MTH.B405)

### Course Syllabus

#### Important Pointers:

- <http://www.math.titech.ac.jp/~kotaro/class/2019/geom-a> (official web)
- <http://www.official.kotaroy.com/class/2019/geom-a> (a mirror)
- <http://www.ocw.titech.ac.jp/> (Tokyo Tech OCW)
- Office 231, the second floor of the main building (Yamada's office)

**Lecture:** Tuesdays 10:45–12:15, Class room 104, the main building

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

**Course Description:** As an informal introduction to Riemannian manifold, geometry of submanifolds in (pseudo) Euclidean spaces is introduced.

**Student learning outcomes:** Students are expected to learn

- Pseudo Euclidean space.
- Induced metrics on submanifolds in a (pseudo) Euclidean space.
- Covariant derivatives on submanifolds.
- Geodesics on submanifolds.

**Textbooks:** No textbook is set. Lecture note will be provided.

#### 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 the lecturer's mailbox (at office 231, the second floor of the main building) by 13:00 on the following Thursday of the lecture, in the specified sheet. *Japanese is acceptable.*
- Questions, requests and comments (and the answers, lecturer's comments) will be disclosed on the following class.