THE CHINESE UNIVERSITY OF HONG KONG
Department of Mathematics
MATH 5061 (Second term, 2023-24)
Riemannian Geometry I
Course Outline

Course Description

This course is intended to provide a solid background in Riemannian Geometry. Topics include: affine connection, tensor calculus, Riemannian metric, geodesics, curvature tensor, completeness and some global theory. Students taking this course are expected to have knowledge in differential geometry of curves and surfaces.

Instructor

- LI Man-chun Martin (Office: LSB 236. Email: `martinli@math.cuhk.edu.hk`)

Time and Venue

- **Lectures**: Mon 2:30PM - 5:15PM at LSB 222

Textbook and References

We will not be using just one single textbook for the course. Instead, we will pick up some topics in the following references:

- S.S. Chern, W.H. Chen and K.S. Lam, *Lectures on Differential Geometry*

- M. do Carmo, *Riemannian Geometry*

- S. Gallot, D. Hulin and J. Lafontaine, *Riemannian Geometry*

- J. Jost, *Riemannian Geometry and Geometric Analysis*

- J.M. Lee, *Riemannian Manifolds: An Introduction to Curvature*

Assessment Scheme

- **Assignments**: 50%

- **Final Examination**: 50%

Course Webpage

Please check regularly Blackboard and the following course webpage for course materials and announcements:

`http://www.math.cuhk.edu.hk/course/2324/math5061`