MATH 764 COURSE OUTLINE – 2003

Instructor: Dr. Pengfei Guan (HH-315, Extension 27155) Email: guan@math.mcmaster.ca

Lecture Schedule: Monday & Wednesday: 1:30-3:00pm. The first lecture starts on Wednesday, Sept. 10 (classroom to be arranged).

Reference:

Beals-Fefferman-Grossman, Strictly pseudoconvex domains in \mathbb{C}^n . Bull. Amer. Math. Soc. 8 (1983), 125-322.

Schoen-Yau, Lectures on differential geometry, International Press, 1994. Warner, Foundations of differentiable manifolds and Lie groups. GTM series, 94. Springer-Verlag, 1983.

Office Hours: Tuesday & Thursday, 1:30-2:30pm, or by appointment.

Course Content: We will cover some advanced topics in global differential geometry: Hodge Theorem, Chern-Gauss-Bonnet Theorem, basic Comparison and Splitting Theorems, etc. We will touch some subjects in geometric analysis, e.g., heat kernel of Riemannian manifolds and some geometric nonlinear partial differential equations, like the Ricci flow and mean curvature flow, if the time permits. There is no fixed textbook for the course, the material will be drawn from various chapters of the references listed above and related research papers.

Assignments: There will be 3-4 assignments.

Final Examination: Oral presentations.

Marking System: Assignments, 40%; Final Examination, 60%.

Ethics: Attention is drawn to the "Statement on Academic Dishonesty" received during registration and available in the Senate office. Any student who infringes any of these resolutions will be treated according to the published policy. Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.