MATH 602 Selected Topics in Analysis II
(Introduction to Several Complex Variables)

- Analytic functions of one complex variable (in the frame of Chapter 1 in [1]).
- Elementary properties of analytic functions of several complex variables: Cauchy formula for polydiscs and its consequences, $\bar{\partial}$-problem for a polydisc, power series and Reinhardt’s domains, domains of holomorphy
- Rings of holomorphic functions and $\bar{\partial}$-cohomology
- Pseudoconvexity and plurisubharmonicity
- $L^2$-estimates and existence theorems for the $\bar{\partial}$-operator in $\mathbb{C}^n$
- Stein manifolds
- $L^2$-estimates and existence theorems on Stein manifolds
- Envelopes of holomorphy of domains on Stein manifolds
- Embeddings of Stein manifolds
- Cousin’s problems on Stein manifolds

Recommended books:
