# MAT 566: Differential Topology
# Spring 2018

## Presentation 5: Atiyah-Singer Index Theorem
### (after Multiplicative Sequences)

You should give an indication of what the Index Theorem is about and perhaps of where it comes from based on Chapter 3 of *Spin Geometry*:

(1) $A$-class in general, as well as for smooth complex curves and surfaces;

(2) statements of the Index Theorems;

(3) some examples such as Riemann-Roch for a curve, Noether's Lemma, Euler class formula, Signature Theorem;

(4) a little bit of where the Index Theorem comes from, such as pseudodifferential operators and K-theory