PRESENTATION TOPICS:

1. Acyclic space (page 142)
2. Lens spaces (pages 144-145)
3. Simplicial approximation of CW complexes (pages 182-184)
4. **Proposition 2B1 (pages 169-170)[SM]
5. *H-spaces and Hopf Algebra (pages 281-286)[SF]
6. Dual Hopf Algebras (pages 289-291)
7. **Stiefel Manifolds (pages 301-302)[ES]
8. Bockstein Homomorphism (pages 303-306)
9. Transfer Homomorphism (pages 321-322)
10. **Example 3.9 (pages 208-209)[DS]
11. **Structures of division algebra on $\mathbb{R}^n$ (Theorem 3.20)[SF]

* means that the topic is taken
**presented

Home Work 1 (Quiz on February 9th)
(pages 155-159) Exercises: 2, 3, 4, 10, 19, 21, 22, 27, 28;
(pages 176) Exercises: 1, 2;
(page 184) Exercises: 2.

Home Work 2 (Quiz on March 6th)
(pages 204-205) Exercises: 3, 6, 7, 9, 11;
(page 229) Exercises: 2, 4, 6, 7.

Home Work 3 (Quiz on April 10th)
(pages 257-259) Exercises: 3, 5, 7, 11, 16, 20, 22, 25.

EXTRA CREDIT:

Credit for *-problems will be given to first 4 persons who bring a correct solution to my office. Then the problem will be removed from the list.

1. (3 pts) Show that there are only countably many homotopy types of finite CW complexes.
2. (5 pts) Define a map $q : \mathbb{R}P^\infty \to \mathbb{C}P^\infty$ such that q^* for integral cohomology is surjective in even dimensions.

3. (3 pts) Show that an oriented closed n-manifold for any k admits a map $f : M \to S^n$ of degree k.

4. (4 pts) Show that any map $f : M \to N$ between closed orientable manioflods with $deg(f) = 1$ induces a surjective homomorphisms of homology groups.