

# MA3008 – Algebraic Topology

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# When are the lectures?



Weeks 1,3,5,7,9,11

Monday	13:10-14:00	Maths/M/1.02
Tuesday	16:10-17:00	Maths/M/0.40
Friday	16:10-17:00	Maths/M/0.40

Weeks 2,4,6,8,10

Tuesday	16:10-17:00	Maths/M/0.40
Friday	16:10-17:00	Maths/M/0.40

**Total:** 22 fifty minute lectures + 5 exercise lectures

# Syllabus content

- Overview: What is Algebraic Topology?
- Continuous maps and open sets
- Topological spaces
- Subspaces, products and quotients
- Main examples of top. spaces
- Connectedness
- Compactness
- Separation properties
- Homotopies and homotopy equivalence
- Fundamental group
- Applications

# Learning Materials



- (Some) **lecture notes** will be provided via **Learning Central**

[learningcentral.cf.ac.uk](http://learningcentral.cf.ac.uk)

or via my personal homepage

[upennig.weebly.com/ma3008---algebraic-topology.html](http://upennig.weebly.com/ma3008---algebraic-topology.html)

The password here is: **topology1!**

- Otherwise, you are expected to **take notes of lectures!**

# Reading list



- ***Essential Topology***  
*Crossley, Martin D.; Springer 2005*
- ***Topology***  
*Hocking, John G.; Young, Gail S.; Dover Publications 1988*
- ***Topology and Geometry***  
*Bredon, Glen E.; Springer 1993*
- ***Algebraic Topology***  
*Hatcher, Allen; Cambridge University Press 2001*

# Exercises

(the most important part of any lecture!)



To help you with the material of the course, exercise sheets will be provided which highlight the core content of the lectures. You can find the exercises on [Learning Central](#).

If you want feedback on your solutions, please hand them in

- either in the lecture every second Friday (in Week 2,4,6,8,10)
- or put them in the pigeon hole with my name in the school office

The exercises will be discussed on Monday!



# Questions so far?



**Course Lecturer:** Dr. Ulrich Pennig  
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