1 Class - Complex numbers and the Complex Plane

1.1 Introduction of the course: Complex Function Theory

- instructor: Jan Brezina (Faculty of Arts and Science)
- email: brezina@artsci.kyushu-u.ac.jp
- room: Center zone 3, No. 3601
- teaching assistant: Likhith Manjunatha (Graduate School of Engineering)
- email: manjunatha.likhith.809@s.kyushu-u.ac.jp
- room: West 4, No. 617

Style of class

- challenge based learning

Class flow

- if you don't come to the next class (for whatever reason) let me know in advance (a day before preferably)
- before entering the classroom check a seating list on the front door and sit accordingly

Part	Duration	Content
I	30min	pair work on basic challenges
II	15min	lecture (advanced)
III	30min	working on advanced challenges
IV	15min	lecture (basic)

- Part I
  - students discuss solutions of last week challenges in a pair
  - pairs will agree on a solution for each challenge
  - pairs will compare their solution with a solution sheet (will be distributed)
  - instructor and TA are available for consultation
  - sometimes a short (5-10min) test happens at the end
- Part II
  - short lecture-style summary of the important points learned
  - lecture on advanced knowledge
  - advanced challenges published
- Part III
  - pairs work on the new advanced challenges
  - instructor and TA are available for consultation

- Part IV
  - lecture-style overview of the next topic
  - basic challenges on the next topic published
- solutions of tests will be published on challenge-hub after the class
- students work at home on the challenges
- student learn the necessary terminology and theory to successfully finish the challenges
- students report their progress through challenge-hub
  - if a challenge asks for an answer submit your answer to check whether it is correct, once the answer is correct rate the difficulty
  - if a challenge does not ask for an answer then only rate the difficulty once you have solved the challenge
- the duration times or class structure might differ depending on our needs
- if you find any mistake in challenges, solutions, software, etc. please let me know asap

Class materials

- structurally we will follow A first course in Complex Analysis (3rd or 4th edition) by D.G. Zill and P.D. Shanahan
- any source in any language you find and like (online classes like Khan Academy for example)

Grading

- A - D is a pass (get credit), F is fail (no credit)
- depending on a person - meet the minimum requirement (D) is enough or want to learn something (A-C) - your choice

Course grading

challenge logbook	10%
short tests	20%
midterm exam	30%
final exam	40%

- challenge logbook
  - keep a logbook of your solution attempts
  - random checks against Internet record will occur
  - if your logbook does not match the Internet record more than once then no gain, otherwise you get 10% towards the final grade
- shorts tests
  - at the end of some of the pair work sessions

  - 6 tests, the average of 5 best tests gives you 20% towards the final grade
  - short tests indicate how much harder you need to work
- midterm exam (60 minutes) - June 5th
- final exam (90 minutes) - July 31st

Basic advice

- active participation/preparation necessary
- do as much work as YOU need
- math can't be cramped, prepare little by little for each week
- reexamination is almost impossible

Consultation

- always welcome to consult with me or TA
- setup an appointment (personally, by email)
- preferably come in group
- consult with classmates

1.2 Class schedule Room: Open learning plaza, No. 14

10th April	Wednesday	10:30 - 12:00	1st Class
17th April	Wednesday	10:30 - 12:00	2nd Class
24th April	Wednesday	10:30 - 12:00	3rd Class
8th May	Wednesday	10:30 - 12:00	4th Class
15th May	Wednesday	10:30 - 12:00	5th Class
22th May	Wednesday	10:30 - 12:00	6th Class
29th May	Wednesday	10:30 - 12:00	7th Class
5th June	Wednesday	10:30 - 12:00	**Midterm exam**
12th June	Wednesday	10:30 - 12:00	9th Class
19th June	Wednesday	10:30 - 12:00	10th Class
26th June	Wednesday	10:30 - 12:00	11th Class
3th July	Wednesday	10:30 - 12:00	12th Class
10th July	Wednesday	10:30 - 12:00	13th Class
17th July	Wednesday	10:30 - 12:00	14th Class
24th July	Wednesday	10:30 - 12:00	15th Class
31st July	Wednesday	10:30 - 12:00	**Final exam**

Class challenges

- Algebra of complex numbers (basic)
- Algebra of complex numbers (advanced)
- Complex plane