

KEEE202 (03) Engineering Mathematics 2

# Course Overview

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*Chang-Su Kim*

# Course Information

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- Pre-requisites: High school mathematics
- Course Homepage: <http://mcl.korea.ac.kr>
- Questions
  - ▶ Ask questions anytime, but preferably during lectures
  - ▶ Tel: 3290-3217
  - ▶ Email: changsukim@korea.ac.kr
- Our Tutor: Juhyuk Mun
  - ▶ Tel: 3290-3806
  - ▶ Email: jhmun@mcl.korea.ac.kr
  - ▶ New Engineering Building, Rm 405

# Course Information

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- Assessment Methods

- ▶ Assignment: 15%
  - ✗ Solving problems in textbook
- ▶ Attendance & Quizzes: 15%
- ▶ Mid-term Exam: 30%
- ▶ Final Exam: 40%

- Textbooks

- ▶ E. Kreyszig, Advanced Engineering Mathematics, 10th edition, Wiley, 2011
- ▶ G. Strang, Linear Algebra and Its Applications, 4th edition, 2006

- References

- ▶ R. V. Churchill and J. W. Brown, Complex Variables and Applications, McGraw-Hill, 1990.

# Course Outline

- Tentative schedule

Week	Topics	Events
1	Complex Numbers	
2	Complex Numbers and Integration	
3	Complex Integration	
4	Power Series and Taylor Series	
5		Autumn Festival
6	Laurent Series and Residue Integration	
7	Laurent Series and Residue Integration	
8		<b>24 OCT 2017</b> Mid exam 26 OCT 2017 No class
9	Linear Algebra	
10	Linear Algebra	
11	Linear Algebra	
12	Linear Algebra	
13	Linear Algebra	
14	Linear Algebra	
15		Final exam

# What are taught?

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- Complex Analysis
  - ▶ Complex numbers
  - ▶ Complex functions
    - ✗ Limit, continuity, differentiation, integration
- Linear Algebra
  - ▶ Vectors, matrices
  - ▶ Linear equations
  - ▶ Inner product and orthogonality
  - ▶ Eigenvalues and eigenvectors

# What are taught?

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- Skills
  - ▶ Apply theorems
- Logics
  - ▶ Understand, prove, and conjecture theorems
- Skills are less important than logics

WHY?

To be an engineer.

# Deraining

## Video Deraining and Desnowing

TIP  
Sept. 2015



# Video Stabilization



Input



Output

TIP  
Dec. 2015

# Saliency



TIP  
Aug. 2015

# Object Tracking

## SOWP: Spatially Ordered and Weighted Patch Descriptor for Visual Tracking

-Supplementary Material-

Anonymous ICCV Submission

Paper ID 103

ICCV 2015

# Multiple Object Tracking

CDT: Cooperative Detection and Tracking for  
Tracking Multiple Objects in Video Sequences  
- Supplementary material -

Anonymous ECCV submission

Paper ID: 1293

ECCV 2016

# Primary Object Segmentation

- Qualitative results

**Experimental Results on DAVIS Dataset**

# Course Materials & More Information

- Source codes and datasets are available at <http://mcl.korea.ac.kr>

Research  
Video Object Segmentation

