TKB213203

Biomedical Image Processing

Teknik pengolahan citra biomedis

BASIC INFORMATION

Course Credit [sks]	3 / 100 minutes per Week
Course Type	Required
Course Classification	Engineering Topics
Prerequisites	-

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Development of Engineering Solution (b)	Modern Tools Utilization (e)
Engineering Design (c)	Choose Student Outcome

Learning Outcomes

LO1 Students are able to understand the basic of digital image processing.

[CPMK 1: Mahasiswa mampu memahami dasar pengolahan citra digital]

LO2 Students are able to explain the the application of image processing methods. [CPMK 2: Mahasiswa mampu menjelaskan penerapan dari metode-metode pengolahan citra].

LO3 Students are able to apply the image processing methods to biomedical image. [CPMK 3: Mahasiswa mampu menerapkan metode pengolaha citra pada citra biomedis]

LO4 Students are able to design the system for biomedical image processing. [CPMK 4: Mahasiswa mampu merancang sistem untuk pengolahan citra biomedis.

COURSE DESCRIPTION

This course does not have any prerequisites. This course learns fundamental concepts and theories must be known descriptively or simulated, in the method of processing and its application. These subjects include the definition and scope of image processing techniques, image perception, image digitization, image

compression, image enhancement, images filtering, image analysis and feature extraction in imagery for image classification and recognition.

DESKRIPSI MATAKULIAH

Matakuliah ini tidak memiliki prasyarat. Matakuliah ini mempelajari konsep-konsep dasar dan teori-teori yang harus diketahui secara deskriptif atau simulasi, baik dalam metode pengolahan maupun penerapannya. Mata pelajaran ini meliputi definisi dan ruang lingkup teknik pengolahan citra, persepsi citra, digitalisasi citra, kompresi citra, peningkatan citra, penapisan citra, analisis citra dan ekstraksi ciri pada citra untuk klasifikasi dan pengenalan citra.

TOPICS

1. Introduction to image processing in biomedical imaging (Pengantar pengolahan citra pada pencitraan biomedis).
2. Biomedical Image Perception (Persepsi Citra Biomedis)
3. Biomedical Image Enhancement (Peningkatan Citra Biomedis)
4. Biomedical Image Filtering and Restoration (Penapisan dan Perbaikan Citra Biomedis)
5. Biomedical Image Compression (Kompresi Citra Biomedis)
6. Color image processing (Pengolahan Citra Warna)
7. Morphological image processing (Pengolahan Citra Berbasis Morfologi)
8. Biomedical Image Segmentation (Segmentasi Citra Biomedis)
9. Biomedical Image Analysis (Analisis Citra Biomedis)
10. Biomedical Image Feature extraction (Ekstraksi Ciri Citra Biomedis)
11. Biomedical Image Classification and Recognition (Klasifikasi dan Pengenalan Citra Biomedis)

REFERENCES

1. Jain, A. K., 1989, Fundamental of Digital Image Processing, Prentice Hall.
2. Gonzalez, R.C., R.E. Woods, 2008, Digital Image Processing, Third Edition, Pearson Prentice Hall, New Jersey.

3. Deserno, Thomas M.,2011, Biomedical Image Processing, Springer