

## Visual pattern processing

2 units (selection)

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**Target** The basic technologies which replace the visual pattern processing function of man by computer and their applied technologies are made to master.

**Outline** The advanced processing techniques of visual pattern, i.e., the pre-processing techniques, the feature extraction techniques, the classification techniques of visual pattern, the processing techniques of color image and their application examples are lectured.

**Style** Lecture in combination with Portfolio

**Keyword** *pattern recognition, vision, image processing*

**Fundamental Lecture** “**Applied Image Processing**”(1.0)

**Goal** Acquisition of knowledge about the processing theories of visual pattern and their various applied technologies, and the processing technologies of color image

**Schedule**

1. Concept of pattern recognition
2. Statistical pattern classification method 1
3. Statistical pattern classification method 2
4. Pattern classification method by the structural analysis technique
5. Pre-processing method of visual pattern
6. Feature extraction method of visual pattern 1
7. Feature extraction method of visual pattern 2
8. Segmentation method of visual pattern 1
9. Segmentation method of visual pattern 2
10. Pattern classification method by neural network
11. Pattern classification method by GA
12. Security image processing
13. Tracking of moving object
14. Texture analysis
15. The feature extraction method of color image and its application
16. Periodic examination

**Contents** <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216676>

**Student** Able to be taken by only specified class(es)

**Contact**

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(Office Hour: 月, 水曜日 15:00~ 17:00(年度ごとに学科の掲示を参照すること))

**Note**

- ◇ 授業を受ける際には、2時間の授業時間毎に2時間の予習と2時間の復習をしたうえで授業を受けることが、授業の理解と単位取得のために必要である。
- ◇ 授業計画1~15は、各講義の最後に行なわれる演習および最終試験により達成度評価を行なう。