**Schedule for 2310506**

**BIOINFORMATICS I (3 credits)**

**First semester (2019)**

**Time**: TH, FR 14.00 - 16.00

**Room**: COM2, MVRH                                    Co-ordinator: Teerapong

| Topic | Lect | Prac | Date | Instructor |
|---|---|---|---|---|
| 1. Introduction to Bioinformatics | 1 | 1 | 16-Aug | Teerapong |
| 2. Databases | | | | |
| 2.1 Data banks of biological information | 2 | 2 | 22, 23 Aug | Thanyada |
| 2.2 Retrieval of information and data mining | 1 | 1 | 29-Aug | Thanyada |
| 2.3 Submitting sequences to the databases | 1 | 1 | 30-Aug | Thanyada |
| 3. Sequence analysis I | | | | |
| 3.1 Sequence alignment | 2 | 2 | 5, 6 Sep | Teerapong |
| 3.2 Databases searching | 1 | 1 | 12-Sep | Teerapong |
| 3.3 Phylogenetic analysis | 1 | 1 | 13-Sep | Anchittha |
| 4. Sequence analysis II | | | | |
| 4.1 Identification of gene structures | 2 | 2 | 19, 20 Sep | Rath |
| 4.2 Protein sequence analysis | 2 | 2 | 26, 27 Sep | Surasak |
| 5. Structure analysis | | | | |
| 5.1  Molecular modeling | 1 | 1 | 4-Oct | Thanyada |
| **Mid-term examination:** | | | | |
| 5. Structure analysis | | | | |
| 5.1  Molecular modeling | 1 | 1 | 17-Oct | Thanyada |
| 5.2  Prediction of protein tertiary structure by homology modeling | 2 | 2 | 18, 24 Oct | Thanyada |
| 5.3 Computer simulation | 4 | 4 | 25, 31 Oct, 1, 7 Nov | Thanyada |
| 5.4 Protein design | 3 | 3 | 8, 14, 15 Nov | Surasak |
| 6. Gene expression and genome analysis (High-throughput data analysis) | | | | |
| 6.1  Genome sequencing and annotation | 2 | 2 | 21, 22 Nov | Teerapong |
| 6.2  Analysis of high throughput expression data | 2 | 2 | 28, 29 Nov | Teerapong |
| **Final examination:** | | | | |
| | | | | |
| | | | | |