**Bachelor of Science Program in Microbiology (2016)**

**Name of Degree:** Bachelor of Science (Microbiology)

**Abbreviation:** B.Sc. (Microbiology)

**Curriculum**

**Total Credits** **132 Credits**

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| **First Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 101 | English for Communication | 3(3-0-6) |
| 000 132 | Life and Aesthetics | 3(3-0-6) |
| 311 101 | Biology I | 3(3-0-6) |
| 311 102 | Biology Laboratory I | 1(0-3-2) |
| 312 101 | General Chemistry I | 3(3-0-6) |
| 312 102 | General Chemistry Laboratory I | 1(0-3-2) |
| 314 123 | Calculus for Biological Science I | 3(3-0-6) |
| 315 106 | Introductory Physics | 3(3-0-6) |
| 315 181 | General Physics Laboratory I | 1(0-3-2) |
| **Total credits** | | **21** |
| **Cumulative credits** | | **21** |

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| **First Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 102 | English for Academic Purposes I | 3(3-0-6) |
| 000 130 | Information Literacy Skills | 3(3-0-6) |
| 311 103 | Biology II | 3(3-0-6) |
| 311 104 | Biology Laboratory II | 1(0-3-2) |
| 312 103 | General Chemistry II | 3(3-0-6) |
| 312 104 | General Chemistry Laboratory II | 1(0-3-2) |
| 314 124 | Calculus for Biological Science II | 3(3-0-6) |
| 319 101 | Ecology | 3(3-0-6) |
| 319 102 | Ecology Laboratory | 1(0-3-2) |
| **Total credits** | | **21** |
| **Cumulative credits** | | **42** |

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| **Second Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 312 112 | Basic Organic Chemistry | 3(3-0-6) |
| 312 113 | Basic Organic Chemistry Laboratory | 1(0-3-2) |
| 317 213 | Microbiology | 3(3-0-6) |
| 317 214 | Microbiology Laboratory | 1(0-3-2) |
| 317 215 | Mycology | 3(3-0-6) |
| 317 216 | Mycology Laboratory | 1(0-3-2) |
| 000 103 | English for Academic Purposes II | 3(3-0-6) |
| 000 145 | Leadership and Management | 3(3-0-6) |
| 000 146 | Happiness of Life | 3(3-0-6) |
| **Total credits** | | **21** |
| **Cumulative credits** | | **63** |

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| **Second Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 311 244 | Elementary Genetics | 3(3-0-6) |
| 312 242 | Analytical Chemistry II | 2(2-0-4) |
| 312 243 | Analytical Chemistry Laboratory II | 1(0-3-2) |
| 316 204 | Elementary Statistics | 3(3-0-6) |
| 317 371 | Microbiological Laboratory Management and Quality | 2(2-0-4) |
| 050 108 | English for Science | 3(3-0-6) |
| 000 153 | Local Wisdom | 3(3-0-6) |
| 000 162 | Life and Modern Technology | 3(3-0-6) |
| **Total credits** | | **20** |
| **Cumulative credits** | | **83** |

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| **Third Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 311 | Virology | 2(2-0-4) |
| 317 312 | Virology Laboratory | 1(0-3-2) |
| 317 313 | Microbial Physiology | 3(3-0-6) |
| 317 314 | Microbial Physiology Laboratory | 1(0-3-2) |
| 318 305 | Biochemistry | 3(3-0-6) |
| 318 306 | Biochemistry Laboratory | 1(0-3-2) |
| 362 328 | Immunology | 3(2-3-5) |
| xxx xxx\*\* | Electives | 0-3 |
| xxx xxx | Free Electives | 2-4 |
| **Total credits** | | **18 - 21** |
| **Cumulative credits** | | **101 - 104** |

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| **Third Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 315 | Systematic Bacteriology | 1(1-0-2) |
| 317 316 | Systematic Bacteriology Laboratory | 2(0-6-3) |
| 317 271 | Instrumental Usage in Microbiology | 2(1-3-5) |
| 317 321 | Microbial Genetics | 3(3-0-6) |
| 317 322 | Microbial Genetics Laboratory | 1(0-3-2) |
| 317 492 | Project Proposal | 1(0-3-6) |
| xxx xxx\*\* | Elective  - for regular plan  - for Co-operative Education Plan | 8  10 |
| xxx xxx | Free Electives | 0-2 |
| **Total credits** | | **18 – 20/22** |
| **Cumulative credits** | | **119 - 124/121 - 123** |

**Regular Plan**

|  |  |  |
| --- | --- | --- |
| **Fourth Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 491 | Seminar | 1(0-3-6) |
| 317 493 | Research Project | 2(0-6-1 |
| xxx xxx\*\* | Elective | 4-8 |
| xxx xxx | Free Electives | 0-2 |
| **Total credits** | | **7 - 13** |
| **Cumulative credits** | | **126 - 132** |

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| **Fourth Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| xxx xxx\*\* | Elective | 4-6 |
| xxx xxx | Free Electives | 0-2 |
| **Total credits** | | **6** |
| **Cumulative credits** | | **132** |

**Co-operative Education Plan (Type 1)**

|  |  |  |
| --- | --- | --- |
| **Fourth Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 491 | Seminar | 1(0-3-6) |
| 317 493 | Research Project | 2(0-6-12) |
| xxx xxx\*\* | Elective | 0-2 |
| xxx xxx | Free Electives | 0-2 |
| **Total credits** | | **5** |
| **Cumulative credits** | | **126** |

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| --- | --- | --- |
| **Fourth Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 495 | Cooperative Education in Microbiology | 6 |
| **Total credits** | | **6** |
| **Cumulative credits** | | **132** |

**Co-operative Education Plan (Type 2)**

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| **Fourth Year , 1st Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 495 | Cooperative Education in Microbiology | 6 |
| **Total credits** | | **6** |
| **Cumulative credits** | | **127 - 129** |

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| **Fourth Year , 2nd Semester** | | **Number of Credit** |
| **Course Number** | **Course Title** |
| 317 491 | Seminar | 1(0-3-6) |
| 317 493 | Research Project | 2(0-6-12) |
| xxx xxx\*\* | Elective | 0-2 |
| xxx xxx | Free Electives | 0-2 |
| **Total credits** | | **5** |
| **Cumulative credits** | | **132** |

**Program Lecturers**

1. Assistant Professor Dr. Wiyada Mongkolthanaruk

2. Associate Professor Ngarmnit Nontaso

3. Assistant Professor Dr. Wandee Bunyarachata

4. Assistant Professor Dr. Jutaporn Swangkeaw

5. Dr. Chewapat Saejung

6. Dr. Polson Mahakhan

7. Dr. Nuntavun Riddech

8. Dr. Jindarat Ekprasert