

**UNDERGRADUATE PROGRAM CURRICULUM
BIOLOGY – USP/ESALQ
2014**

| Courses are sorted by recommended completion sequence | | Credits | | | Hours | |
|---|---|-----------|----------|-----------|------------|----------|
| Mandatory Courses | | In class | Workload | Total | Total | Semester |
| CEN0100 | Introduction to Biological Sciences | 1 | 0 | 1 | 15 | 1 |
| CEN0109 | General Ecology | 3 | 1 | 4 | 75 | 1 |
| LCB0140 | Plant Anatomy | 4 | 0 | 4 | 60 | 1 |
| LCE0176 | Calculus and Mathematics Applied to Biological Sciences | 4 | 0 | 4 | 60 | 1 |
| LEA0170 | Invertebrate Zoology I | 4 | 1 | 5 | 90 | 1 |
| LGN0117 | Cell Biology | 4 | 1 | 5 | 90 | 1 |
| First Semester - Total | | 20 | 3 | 23 | 390 | |
| LCB0320 | Plant Systematics and Morphology <i>LCB0140 - Plant Anatomy</i> | 10 | 2 | 12 | 210 | 2 |
| LCE0118 | Chemistry | 4 | 0 | 4 | 60 | 2 |
| LCE0134 | Information and Intelligence Systems for Research and Production Management | 2 | 0 | 2 | 30 | 2 |
| LCE0164 | Applied Mathematics in Population Dynamics <i>LCE0176 - Calculus and Mathematics Applied to Biological Sciences</i> | 2 | 0 | 2 | 30 | 2 |
| LEA0200 | Invertebrate Zoology II <i>LEA0170 - Invertebrate Zoology I</i> | 4 | 1 | 5 | 90 | 2 |
| LGN0218 | General Genetics <i>LGN0117 - Cell Biology</i> | 4 | 0 | 4 | 60 | 2 |
| Second Semester - Total | | 26 | 3 | 29 | 480 | |
| CEN0414 | Tissue Biology and Animal Protection <i>LGN0117 - Cell Biology</i> | 4 | 1 | 5 | 90 | 3 |
| LCB0213 | Biochemistry I <i>LCE0118 - Chemistry</i> | 4 | 0 | 4 | 60 | 3 |
| LCB0420 | Protists <i>LCB0320 - Plant Systematics and Morphology</i> | 4 | 1 | 5 | 90 | 3 |
| LFN0225 | General Microbiology <i>LGN0117 - Cell Biology</i> | 4 | 0 | 4 | 60 | 3 |
| LGN0341 | Cytogenomics and Epigenetics <i>LGN0218 - General Genetics</i> | 4 | 1 | 5 | 90 | 3 |
| Third Semester - Total | | 20 | 3 | 23 | 390 | |
| LCB0185 | Vertebrate Zoology I | 4 | 1 | 5 | 90 | 4 |
| LCB0313 | Biochemistry II <i>LCB0213 - Biochemistry I</i> | 2 | 0 | 2 | 30 | 4 |
| LCE0204 | Biostatistics <i>LCE0176 - Calculus and Mathematics Applied to Biological Sciences</i> | 4 | 0 | 4 | 60 | 4 |
| LEB1302 | Physics for Biology <i>LCE0176 - Calculus and Mathematics Applied to Biological Sciences</i> | 4 | 0 | 4 | 60 | 4 |
| LES0114 | Introduction to Educational Studies | 2 | 2 | 4 | 90 | 4 |
| LGN0335 | Evolution and Population Ecology <i>LGN0218 - General Genetics</i> | 4 | 2 | 6 | 120 | 4 |
| Fourth Semester - Total | | 20 | 5 | 25 | 450 | |
| CEN0140 | Environmental Geoscience | 4 | 1 | 5 | 90 | 5 |
| LCB0217 | Community Ecology <i>LGN0335 - Evolution and Population Ecology</i> | 4 | 1 | 5 | 90 | 5 |
| LCB0246 | Molecular Biology <i>LCB0313 - Biochemistry II</i> <i>LGN0117 - Cell Biology</i> | 4 | 1 | 5 | 90 | 5 |
| LCB0285 | Vertebrate Zoology II <i>LCB0185 - Vertebrate Zoology I</i> | 4 | 2 | 6 | 120 | 5 |
| LCB0323 | Plant Physiology <i>LCB0213 - Biochemistry I</i> <i>LCB0320 - Plant Systematics and Morphology</i> | 4 | 0 | 4 | 60 | 5 |
| Fifth Semester - Total | | 20 | 5 | 25 | 450 | |
| CEN0225 | Stable Isotopes in Biology | 2 | 0 | 2 | 30 | 6 |
| CEN0672 | Ecology and Management of Vertebrates | 5 | 1 | 6 | 105 | 6 |
| LEB0210 | Geoprocessing <i>LCE0176 - Calculus and Mathematics Applied to Biological Sciences</i> | 4 | 0 | 4 | 60 | 6 |
| LZT0307 | Anatomy and Physiology of Vertebrates <i>CEN0414 - Tissue Biology and Animal Protection</i> <i>LCB0213 - Biochemistry I</i> <i>LCB0285 - Vertebrate Zoology II</i> | 4 | 1 | 5 | 90 | 6 |
| LZT0310 | Biotechnology <i>LCB0246 - Molecular Biology</i> | 4 | 1 | 5 | 90 | 6 |
| Sixth Semester - Total | | 19 | 3 | 22 | 375 | |

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|---|---|------------|-----------|------------|-------------|-------------|
| Mandatory Courses | | In class | Workload | Total | Total | Semester |
| 0110350 | Cropping Systems <i>CEN0140 - Environmental Geoscience</i> | 4 | 0 | 4 | 60 | 7 |
| CEN0310 | Paleobiology <i>CEN0140 - Environmental Geoscience</i> | 4 | 2 | 6 | 120 | 7 |
| CEN0628 | Landscape Ecology <i>LCB0217 - Community Ecology</i> <i>LEB0210 - Geoprocessing</i> | 4 | 1 | 5 | 90 | 7 |
| LCF0644 | Management of Renewable Natural Resources <i>LGN0335 - Evolution and Population Ecology</i> | 4 | 0 | 4 | 60 | 7 |
| LES0261 | Cultural, Scientific and Academic Activities <i>LES0114 - Introduction to Educational Studies</i> | 2 | 6 | 8 | 210 | 7/8 |
| LES0266 | Politics and Organization of Brazilian Education <i>LES0114 - Introduction to Educational Studies</i> | 4 | 0 | 4 | 60 | 7 |
| LES0625 | Supervised Internship in Teaching Practices <i>LES0114 - Introduction to Educational Studies</i> | 3 | 2 | 5 | 105 | 7/8 |
| Seventh Semester - Total | | 25 | 11 | 36 | 705 | |
| LES1202 | Didactics <i>LES0266 - Politics and Organization of Brazilian Education</i> | 4 | 1 | 5 | 90 | 8 |
| Eighth Semester - Total | | 4 | 1 | 5 | 90 | |
| 0110360 | Quality of Life and Health | 2 | 0 | 2 | 30 | 9 |
| LCB0455 | Monograph (bachelor degree) | 2 | 10 | 12 | 330 | 9/10 |
| LES0315 | Biological Sciences Teaching Practices I <i>LES1202 - Didactics</i> | 2 | 4 | 6 | 150 | 9 |
| LES0340 | Instrumentation for Biological Sciences Teaching <i>LES1202 - Didactics</i> | 4 | 1 | 5 | 90 | 9/10 |
| LES1302 | Educational Psychology I <i>LES0114 - Introduction to Educational Studies</i> | 2 | 0 | 2 | 30 | 9 |
| Ninth Semester - Total | | 12 | 15 | 27 | 630 | |
| LES0209 | Communication and Education <i>LES0114 - Introduction to Educational Studies</i> | 2 | 1 | 3 | 60 | 10 |
| LES0241 | Educational Psychology II <i>LES1302 - Educational Psychology I</i> | 4 | 1 | 5 | 90 | 10 |
| LES0416 | Biological Sciences Teaching Practices II <i>LES0315 - Biological Sciences Teaching Practices I</i> | 2 | 4 | 6 | 150 | 10 |
| Tenth Semester - Total | | 8 | 6 | 14 | 300 | 10 |
| Total (Licentiate Degree) | | 172 | 45 | 217 | 3930 | |
| Total (Bachelor Degree) | | 145 | 35 | 180 | 3225 | |

* Courses in italics are prerequisites to courses displayed above them

* Courses in bold and italics are for double degrees (licentiate and bachelor degree)

Ideal duration: 10 semesters

Minimum duration: 8 semesters

Maximum duration: 15 semesters

Total credits required for bachelor degree completion: 215 (in class + workload)
Total credits required for licentiate degree completion: 215 credits (in class + workload)