

生物信息学（留） 0141703

Fall, 2023

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| Week | Meeting date | Lectures | Algorithms |
|------|--------------|---|---------------------------------------|
| 2 | 28 Sept | Lesson 1. Intro Sequence alignment (HWK1, 10%) | Dynamic programming, |
| 3 | 7 Oct | Lesson 2. Database search, Intro to phylogenetics | BLAST |
| 4 | 12 Oct | Lesson 3. Phylogenetic_methods, Molecular evolution, | UPGMA, NJ, Maximum Likelihood |
| 5 | 19 Oct | Lesson 4. Tree reconstruction, Tree support and systematic errors Phylogenomics (HWK2, 10%) | Bayesian Approach, MCMC, Bootstrap |
| 6 | 26 Oct | Lesson 5. Pattern matching, Profiling | Hidden Markov Model |

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| 7 | 2 Nov | Lesson 6. NGS data assembling, Read mapping (HWK3, 10%) | Suffix tree, De Bruijn Graph |
| 8 | 9 Nov | Lesson 7. Artificial neural networks, AI applications | Neural network |
| | TBA | Q&A, Review | Online & Offline |
| 9 | 16 Nov | Lesson 8. Final exam 70% | Close book |

N.B. we will meet every Thursday from 18:00 to 21:20 in room 2-103. The lecture materials can be found at <http://www.lmse.org/learning/bioinformatics.html>.