

IISER Pune - Course Content

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| Semester | AUG 2024 |
| Open to Semester | 5,7,11,13,21 |
| Course Code | BI3134 |
| Course title | Bioinformatics |
| Nature of Course | LL - Lecture and Lab |
| Credit | 4 |
| Coordinator and participating faculty (if any) | Dr. M. S. Madhusudhan |
| Pre-requisites | Programming |
| Objectives | This course aims at teaching students about algorithms in Bioinformatics/Informatics. Many of the algorithms though motivated by problems in biology are broadly applicable and the aim of the course is to train oneself in choosing appropriate algorithms for problems. |
| Course content | The course would cover - Sequence alignments, substitution matrices and statistical potentials (including dynamic programming, hidden Markov models, etc) , phylogenetic tree construction, Next generation sequencing data analysis (Burrows-Wheeler transformation, de Bruijn graphs etc), computational structural biology and drug design (introduction to neural networks). |
| Evaluation / Assessment | Mid sem 30% End Sem 30 % Continuous evaluations of programs of algorithms : 40% |
| Suggested readings | Course contents would be shared before the lectures. Students are expected to come prepared with the theory (and questions) and the contact hours would be spent trying to troubleshoot programs of the algorithms and/or problem solving. |
| When Next | Aug 2024 |
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