

## 課程大綱

一、課程說明	This class will introduce the major concepts and methods in bacterial population genetics, a field that is growing rapidly. The students will learn population-level processes that shape genetic variation in bacterial populations and statistical methods that can be used to analyze bacterial genetic data. Both conceptual background in bacterial population biology and fundamental approaches to analyze bacterial population structures will be covered.
二、指定用書	Bacterial Population Genetics in Infectious Disease Editor(s): D. Ashley Robinson Daniel Falush Edward J. Feil ISBN:9780470424742 John Wiley & Sons, Inc.
三、參考書籍	Selected papers from high profile journals
四、教學方式	All students are required to read all assigned chapters and papers and then participate in classroom discussion.
五、教學進度	<ol style="list-style-type: none"> <li>1. Introduction to bacterial population genetics</li> <li>2. Mutation and genetic drift</li> <li>3. Genetic Recombination</li> <li>4. Linkage and the Clonal Complex</li> <li>5. Selection</li> <li>6. Migration and Bacterial Population Structure</li> <li>7. The Coalescent of Bacterial Populations</li> <li>8. Sequence-Based Analysis of Bacterial Population Structures</li> <li>9. Statistical Methods for Detecting the Presence of Natural Selection I</li> <li>10. Statistical Methods for Detecting the Presence of Natural Selection II</li> <li>11. Demographic Influences on Bacterial Population Structure</li> <li>12. Population Genomics of Bacteria I (<i>Staphylococcus</i>)</li> <li>13. Population Genomics of Bacteria II (<i>Streptococcus</i>)</li> <li>14. Population Genomics of Bacteria III (<i>Salmonella</i>)</li> <li>15. Population Genomics of Malaria Parasites</li> <li>16. Population Genomics of Virus I (Ebola virus)</li> <li>17. Population Genomics of Virus II (dengue virus)</li> <li>18. Population Genomics of Virus III (influenza virus)</li> </ol>
六、成績考核	Class discussion: 40%. Assigned presentation: 40%. Attendance: 20%.
七、講義位址 http://	