

The course content is divided into 6 Modules. Each module has its own folder on the Canvas website. Each module contains several chapters from the textbook **Molecular Biology: Principles of Genome Function, 2nd Edition, Craig et al., Oxford**:

Module 1 Introduction (Ch 1, 2) & Basic Methods in Molecular Biology (Ch 19)

Module 2 Chromosome structure and function (Ch 4)

Module 3 Transcription (Ch 4, 8, 9, 10)

Module 4 Translation (Ch 11, 12, 13)

Module 5 Genomics (Ch 18, Ch 19)

Module 6 Replication and DNA repair (Ch 6, 15, 16)

Please see **Course Overview** on Canvas for additional details

Tentative schedule (topics are subject to change – exam dates will NOT change)

| DATE | TOPIC | READING | PROF |
|---------|---|-----------------------|---------------|
| M 8/26 | Class objectives and overview Module 1 Introduction | Ch 1 | Yao (2) |
| W 8/28 | Module 1 Introduction | Ch 2, Ch 19 (1, 2) | Yao (3) |
| M 9/2 | Labor Day | | |
| W 9/4 | Module 1 Basic Methods in Molecular Biology | Ch 19 (3, 4, 6, 7) | Yao (4) |
| M 9/9 | Module 1 Basic Methods in Molecular Biology | Ch 19 (3, 4, 6, 7) | Yao (6) |
| W 9/11 | Module 2 Chromosome structure and function | Ch 4 | Yao (7) |
| M 9/16 | Module 2 Chromosome structure and function | | Yao (9) |
| W 9/18 | Module 2 Chromosome structure and function | | Yao (10) |
| M 9/23 | Module 3 Transcription | Ch 8 | Yao (12) |
| W 9/25 | FIRST EXAM: Exam material includes content covered on 9/18 | | |
| M 9/30 | Module 3 Transcription | Ch 8 | Yao (14) |
| W 10/2 | Module 3 Regulation of transcription | Ch 9 | Yao (15) |
| M 10/7 | Module 3 Regulation of transcription | | Yao (17) |
| W 10/9 | Module 3 RNA processing | Ch 10 | Yao (18) |
| M 10/14 | Module 3 RNA processing | | Yao (20) |
| W 10/16 | SECOND EXAM: Exam material includes content covered on 10/14 | | |
| M 10/21 | Module 4 Translation I | Ch 11.1 – 11.6 | Nishimura (2) |
| | ****Monday October 21 “W” drop date **** | | |

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| W 10/23 | Module 4 Translation II | Ch11.7 – 11.11 Ch11.14 | Nishimura (3) |
| M 10/28 | Module 4 Regulation of Translation | Ch 12 | Nishimura (5) |
| W 10/30 | Module 4 Regulatory small RNAs | Ch 13.1 – 13.7 | Nishimura (6) |
| M 11/4 | Module 4: Methods of studying translation | p839 Ch12.1EA Ch12.3 Ch13.2 EA p808 – p810 | Nishimura (8) |
| W 11/6 | Module 5 Genomics I | 18.1 – 18.5 | Nishimura (9) |
| M 11/11 | Module 5: Methods of studying genomics | Ch 19.15 | Nishimura (11) |
| W 11/13 | Third EXAM: Exam material includes content covered on 11/6 | | |
| M 11/18 | Module 5 Genomics II | 18.6 – 18.11 | Nishimura (13) |
| W 11/20 | Module 6 Replication I | Ch 6.1 – 6.7 | Nishimura (14) |
| 11/25-29 | FALL BREAK | | |
| M 12/3 | Module 6 Replication II | Ch 6.8 – 6.11 | Nishimura (16) |
| W 12/4 | Module 6 DNA damage | Ch 15.1 – 15.7 | Nishimura (17) |
| M 12/9 | Module 6 DNA repair; CRISPR/Cas-9 | Ch16.1 – 16.3 Ch16.8 | Nishimura (19) |
| W 12/11 | Methods Overview | | Nishimura (20) |
| | Fourth EXAM: (Finals week) Covers all course material Wednesday, December 18 th at 7:30 – 9:30 am | | |