## UB/HWI Department of Structural Biology

**A structural biology Ph.D. program for a student well-prepared in biosciences but needing further mathematics and physics preparation**

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| 1st semester (Fall) | | |
| BMS 503 | Principles of Biochemistry | |
| ***or*** BCH 503 | ***or*** Biochemical Principles | |
| **or** BIO 501 | ***or*** Advanced Biological Chemistry | 4 credits |
| STB 531 | Protein Expression, Purification, and Crystallization | 3 credits |
| STB 510 A | Research Rotation I | 2 credits |
| STB 612 | Structural Biology Seminar | 1 credit |
| 2nd semester (Spring) | | |
| BCH 507 | Protein Structure and Function | 2 credits |
| BCH 508 | Gene Expression | 2 credits |
| STB 510 B & C | Research Rotations II & III | 2 + 2 credits |
| STB 612 | Structural Biology Seminar | 1 credit |
| | CHOICE OF RESEARCH TOPIC, ADVISOR, AND COMMITTEE | |
| 3rd semester | | |
| BMS 501 | | |
| *or* BIO 502 | Cell Biology | 4 credits |
| STB 530 | Mathematics and Physics Topics for Bioscience Students | 2 credits |
| STB 533 | Crystallographic Methods of Structural Biology I | 3 credits |
| STB 612 | Structural Biology Seminar | 1 credit |
| STB 700 | Thesis or Dissertation Research | credit |
| 4th semester | | |
| STB 534 | Crystallographic Methods of Structural Biology II | 3 credits |
| BIO 608 | Topics in Macromolecular Structure | 3 credits |
| | Cross-listed as STB Computational Modeling of Biomolecular Structure | |
| ***OR*** | ***OR*** | |
| CHE 512 | NMR and Biomolecular Structure | 3 credits |
| | Cross-listed as STB Spectroscopic Methods of Structural Biology | |
| STB 612 | Structural Biology Seminar | 1 credit |
| STB 700 | Thesis or Dissertation Research | credit |
| 5th semester | | |
| STB 612 | Structural Biology Seminar | 1 credit |
| STB 700 | Thesis or Dissertation Research | credit |
| | CANDIDACY RESEARCH PROPOSAL AND EXAMINATION | |
| 6th semester *et sequentia* | | |
| STB 612 | Structural Biology Seminar | 1 credit |
| STB 700 | Thesis or Dissertation Research | credit |