

| <b>Computer Science Emphasis</b>   |   |   |   |
|--|---|---|---|
| <b>Comprehensive Exam Courses</b>  |   |   |   |
| <b>Fall 2017</b>   | <b>Spring 2018</b>                                  | <b>Fall 2018</b>  | <b>Spring 2019</b>                                  |
| CS 521 - Design and Analysis of Algorithms   | CS 561 - Theory of Computation                      | CS 521 - Design and Analysis of Algorithms                                  | CS 561 - Theory of Computation                      |
| CS 573 - Advanced Software Engineering**   | CS 554 - Advanced Operating Systems                 |   | CS 554 - Advanced Operating Systems                 |
|  | CS 573 - Advanced Software Engineering              |   | CS 573 - Advanced Software Engineering              |
| <b>Additional Emphasis Courses</b>   |   |   |   |
| <b>Fall 2017</b>   | <b>Spring 2018</b>                                  | <b>Fall 2018</b>  | <b>Spring 2019</b>                                  |
|  | CS 510 - Databases                                  | CS 530 - Parallel Computing (Fall Even Years)                               | CS 510 - Databases                                  |
|  | CS 541 - Computer Architecture                      | CS 531 - Advanced Programming Languages                                     | CS 541 - Computer Architecture                      |
|  | CS 555 - Distributed Systems (Spring Even Years)    | CS 557 - Artificial Intelligence  |   |
| **CS 573 is typically a spring only class.   |   |   |   |
| <b>Cyber Security Emphasis</b>   |   |   |   |
| <b>Comprehensive Exam Courses</b>  |   |   |   |
| <b>Fall 2017</b>   | <b>Spring 2018</b>                                  | <b>Fall 2018</b>  | <b>Spring 2019</b>                                  |
| CS 567 - Applied Cryptography  | CS 575 - Software Security (Spring Even Years)      | CS 567 - Applied Cryptography   | MATH 509 - Symmetric Key Cryptology                 |
| CS 622 - Advanced Network Security   | MATH 509 - Symmetric Key Cryptology                 | CS 622 - Advanced Network Security  |   |
| MATH 508 - Advanced Public Key Cryptology  |   | MATH 508 - Advanced Public Key Cryptology                                   |   |
| <b>Additional Emphasis Courses</b>   |   |   |   |
| <b>Fall 2017</b>   | <b>Spring 2018</b>                                  | <b>Fall 2018</b>  | <b>Spring 2019</b>                                  |
| CS 621 - Digital Forensics   | CS 546 - Computer Security                          | CS 621 - Digital Forensics  | CS 546 - Computer Security                          |
| CS 623 - Cyber Physical Systems  | CS 624 - Cyber security of Critical Infrastructures | CS 623 - Cyber Physical Systems   | CS 624 - Cyber security of Critical Infrastructures |
| <b>Computational Science and Engineering Emphasis</b>  |   |   |   |
| <b>Comprehensive Exam Courses</b>  |   |   |   |
| <b>Fall 2017</b>   | <b>Spring 2018</b>                                  | <b>Fall 2018</b>  | <b>Spring 2019</b>                                  |
| CS 507 - Computing Foundations for Computational Science   | MATH 566 - Numerical Methods II                     | CS 507 - Computing Foundations for Computational Science                    | MATH 566 - Numerical Methods II                     |
| MATH 527 - Introduction to Applied Mathematics for Scientists and Engineers  | ME 571 - Parallel Scientific Computing              | MATH 527 - Introduction to Applied Mathematics for Scientists and Engineers | ME 571 - Parallel Scientific Computing              |
| MATH 565 - Numerical Methods I   |   | MATH 565 - Numerical Methods I  |   |
| MATH 572 - Computational Statistics  |   | MATH 572 - Computational Statistics   |   |
|  |   | CS 530 - Parallel Computing (Fall Even Years)                               |   |
| The courses listed on this form are what the program expects will be offered in each semester. Course offerings are subject to change at any time. |   |   |   |