# Software Engineering PhD Course Requirement Worksheet Draft

(Include in Plan of Study)

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| --- | --- |
| Name |  |
| Date |  |
| Prior Degree |  |
| Student ID |  |

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| **Required Units** | **Units** | **Grades** |
| ***Required Core*** SFWE 507 (3) – Foundations of Software Engineering SFWE 513 (3) – Software Engineering Research Methods | 6 units |  |
| ***Additional Core*** *– Select 3 Courses from:** SFWE 502 (4) – Software DevSecOps
* SFWE 503 (3) – Software Project Management
* SFWE 504 (3) – Software Requirements Analysis & Test
* SFWE 505 (3) – Software Architecture & Design
* SFWE 506 (3) – Distributed Computing
 | 9 units |  |
| ***Technical Computing Electives**** *15 Units from the list of approved Technical electives.*
 | 15 units |  |
| ***Minor Courses**** All minor coursework can come from a single disciple or split between two (6 units from each discipline\*)

 \*If the academic department of the respective discipline allows split minors | 12 units |  |
| ***Colloquium**** SFWE 695A Graduate Seminar: Minimum 2 units required
 | 2 units |  |
| ***Dissertation Research**** SFWE 920 Dissertation: Minimum 18 units required
 | 18 units |  |

 **TOTAL = 62 minimum TOTAL** (overall, not current) **=**

**Approved Technical Computing Graduate Electives ()**

*\*Listed semesters offered are when they are* ***typically*** *offered but subject to change\**

* Any SFWE core courses not used to meet the 12-units of *Core* coursework requirement can also be used as technical electives
* SFWE 501 (3) – SW Assurance *(Spring)*
* SFWE 508 (3) –Data Mining (NEW)
* SFWE 509 (3) – Cloud Computing Principles and Practices (NEW)
* SFWE 510 (3) – Cloud Native Software Engineering (NEW)
* SFWE 511 (3) – Software for Industrial Control Systems (NEW)
* SFWE 512 (3) –Robotics (NEW)
* SFWE 513 (3) – Software Engineering Research Methods (NEW)
* CSE 501 (3) – Operating System Design
* ECE 503 (3) – Probability and Random Processes for Engineering Applications *(Fall)*
* ECE 509 (3) – Cybersecurity Concept, Theory, Practice *(Fall)*
* ECE 513 (3) – Web Development and the IoT *(Fall)*
* ECE 523 (3) – Engineering Applications of Machine Learning and Data Analytics *(Spring)*
* ECE 562 (3) – Computer Architecture and Design *(Spring)*
* ECE 576A (3) – Engineering of Computer Based Systems *(Fall)*
* ECE 576B (3) – Embedded System Design and Optimization *(Spring)*
* ECE 579 (3) – Principles of Artificial Intelligence *(Spring)*
* SIE 533 (3) – Fundamentals of Data Science for Engineers *(Spring)*
* SIE 558 (3) – Model Based Systems Engineering *(Spring)*
* SIE 577 (3) – Introduction to Biomedical Informatics *(Fall, Spring)*
* *Other courses may be added at the discretion of the faculty advisor and GSC, or as additional new SFWE courses not listed in section* ***III. New Courses Needed*** *are developed.*