## SOFTWARE ENGINEERING (SOFT)

### SOFT 160 Software Engineering I
**Prerequisites:** MATH 103 or equivalent.
**Notes:** Letter grade only.
**Description:** Introduction to software engineering and to problem solving with computers. Topics include problem solving methods, the use of computational resources to solve problems, and techniques for collaborative software development. Techniques based on disciplined software engineering principles and practices for engineering, building, analyzing and managing software-related artifacts. Common tools and techniques for developing, analyzing, testing, debugging, and managing software and software-related artifacts.
**Credit Hours:** 4
**Max credits per semester:** 4
**Max credits per degree:** 4
**Format:** LEC
**Prerequisite for:** CSCE 230; CSCE 230H; CSCE 235, CSCE 235H; CSCE 311; MECH 300; MECH 350; SOFT 161; SOFT 161H; SOFT 360

### SOFT 160H Software Engineering I
**Prerequisites:** MATH 103 or equivalent
**Description:** Introduction to software engineering and to problem solving with computers. Topics include problem solving methods, the use of computational resources to solve problems, and techniques for collaborative software development. Techniques based on disciplined software engineering principles and practices for engineering, building, analyzing and managing software-related artifacts. Common tools and techniques for developing, analyzing, testing, debugging, and managing software and software-related artifacts.
**Credit Hours:** 4
**Max credits per semester:** 4
**Max credits per degree:** 4
**Format:** LEC
**Offered:** FALL
**Prerequisite for:** CSCE 230; CSCE 230H; CSCE 235, CSCE 235H; SOFT 161; SOFT 161H

### SOFT 161 Software Engineering II
**Prerequisites:** A grade of C+ or higher in SOFT 160 or equivalent
**Notes:** Letter grade only.
**Description:** Design and modeling of complex software systems. Techniques and tools based on disciplined software engineering principles and practices for designing and modeling software-intensive systems from technical, organizational and management perspectives. Techniques for building and analyzing event-driven applications and multi-layer applications with an SQL database backend. Data structures and operations for lists, stacks, queues, and other data structures. Algorithms and data structures for searching and sorting. Concepts and practice of object-oriented programming, including encapsulation, composition, inheritance, and polymorphism.
**Credit Hours:** 4
**Max credits per semester:** 4
**Max credits per degree:** 4
**Format:** LEC
**Offered:** SPRING
**Prerequisite for:** CSCE 322; CSCE 322H; CSCE 378; CSCE 378H; SOFT 260

### SOFT 162 Software Engineering Fundamentals
**Prerequisites:** CSCE 156, CSCE 156H or equivalent
**Notes:** Students must earn a grade of C+ or higher in this course to be admitted to the Software Engineering program.
**Description:** Introduction to software engineering and problem solving with computers.
**Credit Hours:** 2
**Max credits per semester:** 2
**Max credits per degree:** 2
**Format:** LEC
**Offered:** SUMMER

### SOFT 260 Software Engineering III
**Prerequisites:** A grade of C+ or higher in SOFT 161 or equivalent; CSCE 235 or parallel.
**Notes:** Letter grade only.
**Description:** Specification and analysis of complex software systems. Techniques and tools based on disciplined software engineering principles and practices for systematically establishing, defining, analyzing, refining, and managing requirements for software-intensive systems from technical, organizational and management perspectives. Advanced data structures and algorithms. Techniques for conflict resolution, negotiating and managing change, and working effectively in teams.
**Credit Hours:** 4
**Max credits per semester:** 4
**Max credits per degree:** 4
**Format:** LEC
**Prerequisite for:** CSCE 351; CSCE 361, CSCE 361H; CSCE 411H, RAIK 411H; CSCE 413, CSCE 813; CSCE 438, CSCE 838; CSCE 476H; SOFT 261; SOFT 261H, RAIK 383H; SOFT 360
SOFT 260H Software Engineering III
Crosslisted with: RAIK 283H
Prerequisites: A grade of C+ or higher in SOFT 161 or SOFT 161H or SOFT 162 or RAIK 184H or equivalent; CSCE 235 or parallel.
Description: Specification and analysis of complex software systems. Techniques and tools based on disciplined software engineering principles and practices for systematically establishing, defining, analyzing, refining, and managing requirements for software-intensive systems from technical, organizational and management perspectives. Advanced data structures and algorithms. Techniques for conflict resolution, negotiating and managing change, and working effectively in teams.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Offered: FALL
Prerequisite for: CSCE 351; CSCE 361, CSCE 361H; CSCE 411H, RAIK 411H; CSCE 413, CSCE 813; SOFT 261; SOFT 261H, RAIK 383H

SOFT 261 Software Engineering IV
Prerequisites: A grade of C+ or higher in SOFT 260 or equivalent.
Description: Techniques and tools based on disciplined software engineering principles for producing, interpreting, and communicating visual artifacts related to software architecture and construction.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Offered: FALL/SPR
Prerequisite for: CSCE 461, CSCE 861, SOFT 461
ACE: ACE 2 Communication Competence

SOFT 261H Software Engineering IV
Crosslisted with: RAIK 383H
Prerequisites: Good Standing in UNL Honors Program or by invitation; a grade of C+ or higher in SOFT 260, SOFT 260H, or RAIK 283H.
Description: Techniques and tools based on disciplined software engineering principles for producing, interpreting, and communicating visual artifacts related to software architecture and construction.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Offered: FALL/SPR
Prerequisite for: CSCE 461, CSCE 861, SOFT 461
ACE: ACE 2 Communication Competence

SOFT 260 Software Engineering Mentoring and Leadership
Prerequisites: A grade of C or higher in SOFT 160, SOFT 161, SOFT 260 or SOFT 261
Notes: Letter grade only.
Description: Mentoring and leading software engineering teams. Topics include roles and responsibilities of a leader, roles and responsibilities of a mentor, and traits of effective leaders and mentors. Techniques for effectively mentoring and leading software engineering teams.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Format: LAB

SOFT 401H Honors: RAIK Design Studio I
Crosslisted with: RAIK 401H, BSAD 401H, CSCE 401H
Prerequisites: Good standing in the University Honors Program or by invitation; admission to the Jeffrey S. Raikes School of Computer Science and Management; and BSAD/CSCE/SOFT/RAIK 401H.
Notes: First semester in the Jeffrey S. Raikes School of Computer Science and Management design studio
Description: Application of Raikes School core content in a team oriented, project management setting. Complete projects in consultation with private and public sector clients.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Prerequisite for: RAIK 402H, BSAD 402H, CSCE 402H, SOFT 402H
ACE: ACE 8 Civic/Ethics/Stewardship

SOFT 402H Honors: RAIK Design Studio II
Crosslisted with: RAIK 402H, BSAD 402H, CSCE 402H
Prerequisites: Good standing in the University Honors Program or by invitation; admission to the Jeffrey S. Raikes School of Computer Science and Management; and BSAD/CSCE/SOFT/RAIK 401H.
Notes: Second semester in the Jeffrey S. Raikes School of Computer Science and Management design studio
Description: Application of Raikes School core content in a team oriented, project management setting. Complete projects in consultation with private and public sector clients.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Prerequisite for: RAIK 402H, BSAD 402H, CSCE 402H, SOFT 402H
ACE: ACE 10 Integrated Product

SOFT 403 Software Engineering Capstone I
Prerequisites: CSCE 487 or equivalent
Notes: Must be taken exactly one semester before SOFT 404.
Description: A substantial software engineering project requiring design, planning and scheduling, teamwork, written and oral communications, and the integration and application of technical and analytical aspects of computer science and software engineering in consultation with private and public sector clients.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Offered: FALL
Prerequisite for: SOFT 404
SOFTWARE DEVELOPMENT: Offered: FALL
Format: LEC
Max credits per semester: 3
Max credits per degree: 3

Prerequisites: Good standing in the University Honors Program or by invitation; admission to the Jeffrey S. Raikes School of Computer Science and Management; BSAD/CSCE/JOINT/RAIK 402H.

Notes: Third semester of Jeffrey S. Raikes School of Computer Science and Management design studio sequence.

Description: Application of Jeffrey S. Raikes School of Computer Science and Management core content in a team oriented, project management setting. Complete projects in consultation with private and public sector clients. Letter grade only.

Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Prerequisite for: RAIK 400H, BSAD 400H, CSCE 400H, SOFT 400H

SOFTWARE DEVELOPMENT: Offered: SPRING
Format: LEC
Max credits per semester: 3
Max credits per degree: 3

Prerequisites: Good standing in the University Honors Program or by invitation; admission to the Jeffrey S. Raikes School of Computer Science and Management; and BSAD/CSCE/JOINT/RAIK 403H.

Notes: Fourth semester in the Jeffrey S. Raikes School of Computer Science and Management design studio sequence.

Description: Application of Raikes School core content in a team oriented, project management setting. Complete projects in consultation with private and public sector clients. Letter grade only.

Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3

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