

Software Engineering / Software and Security Engineering

Department Information

- **Department Chair:**
Simone Ludwig, Ph.D.
- **Program Coordinator:**
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- **Department Location:**
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- **Department Web Site:**
ndsu.edu/cs/ (<http://ndsu.edu/cs/>)
- **Application Deadline:**
February 1 priority deadline for fall admission; September 1 for spring admission* No summer admission for any Software Engineering Program
- **Credential Offered:**
Ph.D., M.S., M.S.E, Certificate
- **English Proficiency Requirements:**
TOEFL ibt 79; IELTS 6.5; Duolingo 105

In addition to the **Graduate College requirements**, applicants must fulfill the program requirements listed below:

Software Engineering Certificate

1. Bachelor of Science (B.S.) or equivalent degree from an educational institution of recognized standing, including 12 semester hours or equivalent of Computer Science or Software Engineering courses from an educational institution of recognized standing, or at least one year full-time professional software engineering experience;
2. Programming skill in a modern higher level programming language, preferably C++, C#, or Java;
3. A 3.0 (on a 4.0 scale) GPA in previous coursework. Conditional admission may be given with a 2.85 or higher GPA and professional experience.

Master of Software Engineering

1. A B.S. or equivalent degree from an educational institution of recognized standing, including 12 credit hours or equivalent of Computer Science or Software Engineering courses from an educational institution of recognized standing, or at least one year full-time professional software engineering experience.;
2. Programming skill in a modern higher level programming language, preferably C++, C#, or Java;
3. GRE score is not required for admission. However, a GRE score above the median (50th percentile) for the quantitative reasoning portion is strongly recommended for gaining priority in assistantships;
4. International applicants are welcome. International students from some countries are exempt from English proficiency examination requirement (See details at <https://www.ndsu.edu/gradschool/apply/international>). Others must submit TOEFL, IELTS, PTE Academic score or Duolingo score. Minimum requirements are:
 - TOEFL score of at least 550 (paper based) or 79 (internet based)
 - IELTS score of at least 6.5
 - PTE Academic score of at least 53; or
 - Duolingo score of 105.
5. A 3.0 (on a 4.0 scale) GPA in previous coursework. Conditional admission may be given with a 2.85 or higher GPA and professional experience.

Master of Science in Software and Security Engineering

1. A B.S. or equivalent degree from an educational institution of recognized standing with at least a 3.0 grade point average on a 4.0 grade point scale. Eighteen semester hours or equivalent in Computer Science from an educational institution of recognized standing, or at least 2 years of full-time professional software engineering experience. Full time professional experience may offset the GPA requirement at the rate of 0.1 in GPA for each 18 months of such experience to a maximum of 0.3 in GPA;

2. GRE score is not required for admission. However, a GRE score above the median (50th percentile) for the quantitative reasoning portion is strongly recommended for gaining priority in assistantships.
3. International applicants are welcome. International students from some countries are exempt from English proficiency examination requirement (See details at <https://www.ndsu.edu/gradschool/apply/international>). Others must submit TOEFL, IELTS, PTE Academic score or Duolingo score. Minimum requirements are:
 - TOEFL score of at least 550 (paper based) or 79 (internet based)
 - IELTS score of at least 6.5
 - PTE Academic score of at least 53; or
 - Duolingo score of 105.
4. Eligibility for a teaching assistantship/tutor requires the following additional requirements:
 - minimum TOEFL ibT score of 81 (IELTS of 7, PTE of 54, Duolingo of 115),
 - TOEFL ibT Speaking subscale score of 23 or above and
 - TOEFL ibT Writing subscale score of 21 or above
 - IELTS equivalent scores are 6.0 and 6.0 respectively
 - PTE Academic equivalent scores are 62 and 56, respectively
 - Duolingo score is 115 or greater.
5. Programming skill with one modern higher level programming language, preferably C++, C#, or Java.
6. A 3.0 (on a 4.0 scale) GPA in all previous coursework.

Doctor of Philosophy in Software and Security Engineering

1. Four year or longer B.S. or equivalent degree from an educational institution of recognized standing with at least a 3.25 grade point average (GPA) on a 4.0 grade point scale.
 - a. Significant full-time professional software development experience may offset this GPA requirement at the rate of 0.1 in GPA for each 2 years of such experience to a maximum of 0.4 in GPA.
 - b. If the applicant has an M.S. or equivalent degree from an educational institution of recognized standing, the GPA in that degree should be at least 3.35 on a 4.0 scale.
 - c. 18 semester hours or equivalent in Computer Science from an educational institution of recognized standing, or at least 3 years of full-time professional software engineering experience.
2. GRE score is not required for admission. However, a GRE score above the median (50th percentile) for the quantitative reasoning portion is strongly recommended for gaining priority in assistantships.
3. International applicants are welcome. International students from some countries are exempt from English proficiency examination requirement (See details at <https://www.ndsu.edu/gradschool/apply/international>). Others must submit TOEFL, IELTS, PTE Academic score or Duolingo score. Minimum requirements are:
 - TOEFL score of at least 550 (paper based) or 79 (internet based)
 - IELTS score of at least 6.5
 - PTE Academic score of at least 53; or
 - Duolingo score of 105.
4. Eligibility for a teaching assistantship/tutor requires the following additional requirements:
 - minimum TOEFL ibT score of 81 (IELTS of 7, PTE of 53, Duolingo of 115),
 - TOEFL ibT Speaking subscale score of 23 or above and
 - TOEFL ibT Writing subscale score of 21 or above
 - IELTS equivalent scores are 6.0 and 6.0 respectively
 - PTE Academic equivalent scores are 62 and 56, respectively
 - Duolingo score is 115 or greater.
5. Programming skill in at least 1 higher level programming language, preferably C++, C#, or Java.

Financial Assistance

Assistantships are available to selected graduate students. Teaching one section of a lower division service course requires 10 hours of work per week and qualifies the student for a monthly stipend. In addition to the stipend, graduate assistants with a 20 hours/week assistantship receive a full graduate tuition waiver. Graduate assistants with an assistantship that is less than 20 hours/week but at least 10 hours/week receive a 50% graduate tuition waiver. Tuition waivers cover base tuition for NDSU graduate credits only. Students are responsible for differential tuition, student fees, and tuition for non-graduate level credits taken or Cooperative Education credits.

Other assistantships that provide a stipend and tuition waiver include research assistantships, which involve assisting faculty with their research, and graduate service assistantships, which involve tutoring, grading or computer-related work with faculty members or organizations on campus. Relevant

prior experience increases the likelihood of a teaching or tutoring assistantship being awarded. For all assistantships, a student's chances are greater after they have been at NDSU for one or two semesters.