

Doctoral Studies in the United States

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College and Graduate School

- K-12 education (starts at the age of 6)
- College (4)
 - Bachelor's degree: BA, BS
- Graduate school
 - Master's degree: MS (2)
 - Doctoral degree: PhD (3+)
 - (Law, medical, dental, pharmacy, veterinary medical schools)

My perspective: Graduate School Sciences & Engineering

- Mathematics
- Mathematical Sciences
- Management Science
- Mechanical Engineering
- Industrial Engineering
- Systems Engineering
- Operations Research

Entry-level requirements

- Graduate record examination (GRE)
- Test of English as foreign language (TOEFL)
- Recommendation letters from college professors

Foreign students are most welcome!

Academic calendar

- **Fall** semester: Aug/Sept - Dec
- **Spring** semester: Jan - May
- Two **summer** sessions: May - Aug
 - 6 weeks
 - equivalent to a regular semester
 - speeds up the studies
- Commencement and graduation 3 times a year (Aug/Sep, Dec/Jan, May)

Courses

- Course = lectures + demos + recitations + exercises
- 1 credit hour = 50 minutes of instruction per week
- Typical course has 3 credit hours
- Homework assignments
- Small classes (6 – 15 students)

Clemson MS degree in Math Sciences

- 37 credit hours = 12 courses + project
- 4 regular semesters + 1 summer = 2 years
- One summer sessions to cover deficiencies, if needed, or speed up the progress toward the final degree

Doctoral studies at Clemson

- **Coursework:** 18 courses
- **Preliminary exams** in 3 areas of math
(algebra, analysis, computation, operation research, probability and statistics, stochastics)
- **Comprehensive exam** (within 2 semesters)
 - to be determined by the student's PhD Committee
 - assesses student's readiness for doctoral research
 - includes thesis proposal
- **Defense** (within 3 years)
- *My expectation of quality:*
PhD ~ 3 articles in refereed journals

Grades in Graduate School

- A = 4.0
- B = 3.0
- C = 2.0
- D = 1.0
- F = 0.0
- Average ≥ 3.0 , otherwise suspension

Financial Support

- Graduate assistantships
 - Teaching
 - Research
 - Grants from government agencies
 - Projects funded by corporate industry
- Self-supported

Clemson assistantships

- \geq \$18,000 per 12 months
- 20 hours per week
- Competitive additional stipends for students who excel in research

Semester work load

- 15 weeks of classes followed by 1 week of exams
- Typical weekly load:
 - **Coursework**: 3 courses of 3 credit hours each
 - **Teaching** (or **research for the sponsor**):
 - 3 sections per 2 semesters
 - 3 or 4 credit hour courses
 - freshman or sophomore-level math
 - section ~ 20 students
 - **Research** for the doctoral degree
- Work for the sponsor may be closely or loosely related to the doctoral research

Employment

- Academe
- Industry
- Government labs
- Teaching
- Teaching and research
- Research
- Consulting