The Certificate in Computing Applications is a cross-disciplinary course of study in the Colleges of Liberal Arts and Sciences, Engineering, and Business. It is designed for undergraduates not already enrolled in majors in Computer Science, Software Engineering, or Computer Engineering who wish to enhance their degree and employment possibilities by adding expertise in computing applications. The certificate program focuses on teaching students the essential skills required to develop and use computing applications in their subject domains. This certificate program will help students to be successful in today's workplace, ensuring they have the basic knowledge of programming languages and computer systems needed to enhance their employment opportunities.

The certificate program is offered jointly among the three colleges and their respective departments housing the majors of computer science, computer engineering, software engineering, and management information systems.

The program consists of 9 credit hours selected from the core and 12 credit hours in electives. Of the 12 credit hours as electives applied to the certificate, no more than 9 can come from a single department.

**Enrollment in the certificate**

Students should fill the form at [http://www.registrar.iastate.edu/sites/default/files/uploads/forms/Urequest.pdf](http://www.registrar.iastate.edu/sites/default/files/uploads/forms/Urequest.pdf) and bring it to Computer Science Advising Center, 123 Atanasoff Hall.

**Requirements**

- 21 required credits.
- To augment the skills or literacy needed to successfully complete the certificate, a student may take courses listed in the literacy/background course section. These courses do not count towards the certificate.
- All pre-requisites will be enforced, but not all pre-reqs may count towards the certificate.
- Courses applied to the certificate may not be taken on a pass not-pass basis.
- At least 9 of the credits taken at Iowa State University must be in courses numbered 300 or above.
- A minimum of 9 credits used for the certificate may not be used to meet any other department, college, or university requirement for the baccalaureate degree except to satisfy the total credit requirement for graduation and to meet credit requirements in courses numbered 300 or above.
- A student may not receive both an undergraduate major and a certificate of the same name.
- For students earning an Iowa State University baccalaureate degree, a certificate is awarded concurrent with or after the Iowa State University baccalaureate degree.
- A certificate is not awarded until baccalaureate requirements are finished.
- After receiving a baccalaureate degree from any accredited institution, a student may enroll at Iowa State University to earn a certificate.
- A cumulative grade point average of at least 2.00 is required in courses taken at ISU for a certificate.
- A notation of completed certificate will be made on the transcript.

**Part 1 - Core**

Students will complete 1 of the following 2-course sequences:

<table>
<thead>
<tr>
<th>SEQUENCE 1</th>
<th>9-10 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM S 107</td>
<td>Applied Computer Programming 3-4</td>
</tr>
<tr>
<td>or COM S 127</td>
<td>Introduction to Programming for Problem Solving 3-4</td>
</tr>
<tr>
<td>or COM S 207</td>
<td>Fundamentals of Computer Programming 3-4</td>
</tr>
<tr>
<td>COM S 106</td>
<td>Introduction to Web Programming 3</td>
</tr>
<tr>
<td>or COM S 113</td>
<td>Introduction to Spreadsheets and Databases 3</td>
</tr>
<tr>
<td>COM S 252</td>
<td>Linux Operating System Essentials 3</td>
</tr>
</tbody>
</table>

**Part II - Electives**

Minimum of 12 credits, no more than 9 credits can be applied to the certificate from a single discipline. At least 9 credits must be 300 level or above.

Electives courses applicable to the certificate are available from the following programs:

- Accounting (ACCT);
- Aerospace Engineering (AER E);
- Agricultural and Biosystems Engineering (A B E);
- Agronomy (AGRON);
- Animal Science (AN S);
- Apparel, Merchandising and Design (A M D);
- Architecture (ARCH);
- Astronomy and Astrophysics (ASTRO);
- Biochemistry, Biophysics, and Molecular Biology (BBMB);
- Bioinformatics and Computational Biology (BCB);
- Bioinformatics and Computational Biology (BCBIO);
- Biological/Pre-Medical Illustration (BPM I);
- Biology (BIOL);
- Biomedical Engineering (B M E);
- Business Administration (BUSAD);
- Civil Engineering (C E);
- Community and Regional Planning (C R P);
- Computer Engineering (CPR E);
Science (COM S); Curriculum and Instruction (C I); Design Studies (DSN S); Ecology, Evolution, and Organismal Biology (EEOB); Economics (ECON); English (ENGL); Environmental Science (ENSCI); Environmental Studies (ENV S); Event Management (EVENT); Finance (FIN); Genetics (GEN); Genetics, Development and Cell Biology (GDCB); Geology (GEOL); Gerontology (GER); Graphic Design (ARTGR); Industrial Design (IND D); Industrial Engineering (I E); Information Assurance (INFAS); Integrated Studio Arts (ARTIS); Iowa Lakeside Laboratory (IA LL); Journalism and Mass Communication (JL MC); Landscape Architecture (L A); Linguistics (LING); Management Information Systems (MIS); Materials Engineering (MAT E); Materials Science & Engineering (M S E); Mathematics (MATH); Mechanical Engineering (M E); Meteorology (MTEOR); Music (MUSIC); Natural Resource Ecology and Management (NREM); Seed Technology and Business (STB); Software Engineering (S E); Statistics (STAT); Supply Chain Management (SCM); Technology Systems Management (TSM)