# Computer and Information Systems
## Bachelor of Arts Degree
### I. Course Requirements for Major
#### A. Program Requirements
- **1.** CIS 119 Visual Basic Programming  
- **2.** CIS 218 Introduction to Information Systems  
- **3.** CIS 252 Introduction to C++ Programming  
- **4.** CIS 353 Systems Analysis  
- **5.** CIS 363 Database Management Systems

**Concentrations (Choose one)**
- **6.** Information Systems  
  - **a.** CIS 340 Java Programming  
  - **b.** CIS __ Approved Electives (300/400 level)  
  - **c.** CIS 443 Data Communications  
  - **d.** CIS 465 Management Information Systems  
  - **e.** CIS 480 Internship  
  - **f.** CIS 495 Senior Project
- **7.** Networking  
  - **a.** CIS 370 Network Operating Systems  
  - **b.** CIS __ Approved Electives (300/400 level)  
  - **c.** CIS 443 Data Communications  
  - **d.** CIS 470 Data and Network Assurance  
  - **e.** CIS 480 Internship  
  - **f.** CIS 495 Senior Project
- **8.** Web Development  
  - **a.** CIS 340 Java Programming  
  - **b.** CIS __ Approved Electives (300/400 level)  
  - **c.** CIS 460 Web Development  
  - **d.** CIS 480 Internship  
  - **e.** CIS 485 Special Topics  
  - **f.** CIS 495 Senior Project

#### B. Cognate Requirements
- **1.** BAM 311 Business Ethics  
  - or PHI 220 Introduction to Ethics  
- **2.** #MAT 174 Introduction to Data Analysis & Statistics  
- **3.** MAT 260 Discrete Mathematics  
- **4.** TSC 101 Fundamentals of Speech Communication

**Total for Major**

### II. Liberal Arts
- **32 semester hours**  
  # May be double counted toward Major and Liberal Arts Requirement

### III. General Electives
- **43 semester hours**

### IV. Total for Degree
- **120 semester hours**
V. Other Requirements
1. CIS majors are strongly encouraged to have a minor from another discipline. Any of the cognate requirements (section B) may count toward a minor.
2. CIS majors must earn a 2.1 Grade Point Average in their major (sections A & B).
3. CIS majors must register for the Senior Project Seminar in the first semester of the senior year.
4. Students with previous computer background may apply to test out of CIS 218.
5. Students majoring in CIS who are transferring from other institutions may not count grades of “D” earned in CIS courses towards a CIS degree. Such students would need to either retake the course in which the “D” was earned, or substitute it with additional elective hours. Such a determination will be made on an individual basis by the CIS program coordinator.
6. Students must complete at least 18 CIS credits of CIS (section A) at Siena Heights University including CIS 495 for a CIS major.
7. Students must complete 18 hours of 300/400 level CIS courses at Siena Heights University.
8. Classes completed more than seven (7) years earlier cannot be transferred/ applied toward a CIS degree.

Computer and Information Systems
General Minor
I. Requirements for Minor
A. Program Requirements
   1. CIS 119  Visual Basic Programming  3
   2. CIS 218  Introduction to Information Systems  3
   3. CIS 252  Introduction to C++  3
   4. CIS 340  Java Programming  3
   5. CIS 353  Systems Analysis  3
   6. CIS 363  Database Management Systems  3
   7. CIS ___  Approved Electives (300/400 level)  3
   8. CIS 465  Management Information Systems  3
24 semester hours

B. Total for Minor
24 semester hours

Computer Science Minor
Elementary Certification
I. Requirements for Elementary Certification
A. Program Requirements
   1. CIS 119  Visual Basic Programming  3
   2. CIS 218  Introduction to Information Systems  3
   3. CIS 251  Teaching Computer Science-Elementary  3
   4. CIS 252  Introduction to C++  3
   5. CIS 340  Java Programming  3
   6. CIS 370  Network Operating Systems  3
   7. CIS 455  Computer Hardware & Software  3
   8. CIS 460  Web Development  3
24 semester hours

B. Total for Minor
24 semester hours

Computer Science Minor
Secondary Certification
I. Requirements for Secondary Certification
A. Program Requirements
   1. CIS 119  Visual Basic Programming  3
   2. CIS 218  Introduction to Information Systems  3
   3. CIS 252  Introduction to C++  3
   4. CIS 340  Java Programming  3
   5. CIS 370  Network Operating Systems  3
   6. CIS 372  Teaching Computer Science-Secondary  3
   7. CIS 455  Computer Hardware & Software  3
24 semester hours
8. CIS 460  Web Development 3

B. Total for Minor 24 semester hours

II. Other Requirements
1. Students need to complete all the requirements for elementary or secondary teacher certification to receive this minor.
2. Students need to earn a 2.1 Grade Point Average in their minor.
3. For elementary and secondary certifications, all courses must be taken at Siena Heights University except CIS 199.
4. Students need a “C” or better for accepted transfer course(s).
5. At the present time this minor is available only on the Adrian Campus.
6. Classes completed more than seven (7) years earlier cannot be used for this minor.
7. CIS general minors must complete 12 hours of 300/400 level CIS classes at Siena Heights University.

Computer and Information Systems
Associate of Arts Degree

I. Course Requirements
A. Program Requirements 24 semester hours
   1. CIS 119  Visual Basic Programming 3
   2. CIS 218  Introduction to Information Systems 3
   3. CIS 252  Introduction to C++ 3
   4. CIS 340  Java Programming 3
   5. CIS 353  Systems Analysis 3
   6. CIS 363  Database Management Systems 3
   7. CIS ___  Approved Electives (300/400 level) 6

B. Cognate Requirements 6 semester hours
   1. #MAT 174  Data Analysis and Statistics 3
   2. TSC 101  Fundamentals of Speech Communication 3

C. Total for Major 30 semester hours

II. Liberal Arts 13 semester hours
# May be double counted toward Major and Liberal Arts Requirements.

III. General Electives 17 semester hours

IV. Total for Degree 60 semester hours

V. Other Requirements
1. Students must complete twelve (12) hours of 300/400 level CIS classes at Siena Heights University.

General Certificate in CIS

I. Requirements
A. Program Requirements 18 semester hours
   1. CIS 119  Visual Basic Programming 3
   2. CIS 218  Introduction to Information Systems 3
   3. CIS 252  Introduction to C++ 3
   4. CIS 340  Java Programming 3
   5. CIS 353  Systems Analysis 3
   6. CIS 1__  Any three once credit courses above CIS 100 3

B. Total for Certificate 18 semester hours