GENERAL EDUCATION REQUIREMENTS - 48 CREDITS
Please refer to the approved list of Gen. Ed. courses that appears in the newspaper schedule.

I. LIBERAL EDUCATION SKILLS - 15 CREDITS
   A. English Composition (3 credits)
      Engl 111: Writing II  ___________  CR  ___________  GR  __
   B. Mathematics Requirement (3 credits)
      Math 270: Calculus  ___________  CR  ___________  GR  __
   C. Credits to total 15 in Category I, selected from at least two of the following: Biology, Chemistry, Earth Sci., ENVR275, GS411, HON230, Mathematics, Phys. Sci. & Physics.
      Math 221: ______________________  CR  ___________  GR  __

II. LIBERAL KNOWLEDGE - 27 CREDITS
   A. Physical and Biological Sciences (9 credits)
      selected from at least two of the following: Biology, Chemistry, Earth Sci., ENVR275, GS411, HON230, Mathematics, Phys. Sci. & Physics.
      Math 221: ______________________  CR  ___________  GR  __
   B. Social & Behavioral Science (9 credits) selected from at least two of the following: Anthropology, CSD 125, CSD 257, Economics, Geography, GS140, History, HON 240, NURS 320, Pol. Sci., Psychology, Social Work, Sociology, & Women & Gender Studies
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
   C. Arts & Humanities (9 credits) selected from at least two of the following: Art, English, HON 130, Humanities, Intermediate Foreign Language and Cultures, INQ 100, Music, Philosophy, Communication, and Theater.
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________

III. HEALTH AND PERSONAL PERFORMANCE - 3 CREDITS
   A. Health and Wellness (2 credits)
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
   B. Personal Performance (1 course and 1 credit)
      __________:  ______________________  __________:  __________:  __________:  __________:  __________

IV. GEN. ED. ELECTIVES - CREDITS TO TOTAL 48 FROM GEN. ED. excluding credits in Computer Science major. Up to one credit of Personal Performance may be placed here.
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________

V. REQUIREMENTS IN MAJOR: 60 CREDITS
   A. Required courses in Computer Science (42 credits)
      CIS 202: Intro. to Program. & Algorithms I  ___________  CR  ___________  GR  __
      CIS 244: Intro. to Program. & Algorithms II  ___________  CR  ___________  GR  __
      CIS 253: Comp. Organiz. & Assembly Lang.  ___________  CR  ___________  GR  __
      CIS 254: Data Structures  ___________  CR  ___________  GR  __
      CIS 270: Client Side Web Programming  ___________  CR  ___________  GR  __
      CIS 301: Computer Systems Analysis  ___________  CR  ___________  GR  __
      CIS 306: Object-Oriented Programming  ___________  CR  ___________  GR  __
      CIS 355: Operating Systems I  ___________  CR  ___________  GR  __
      CIS 356: Analysis of Algorithms  ___________  CR  ___________  GR  __
      CIS 375: Software Engineering  ___________  CR  ___________  GR  __
      CIS 402: Database Design and Implementation  ___________  CR  ___________  GR  __
      CIS 411: Systems Development Project  ___________  CR  ___________  GR  __
      CIS 412: Parallel Processing  ___________  CR  ___________  GR  __
      CIS 460: Prog. Langs & Computation Theory  ___________  CR  ___________  GR  __
   B. Electives in Major (18 credits)
      CIS 208: Introduction to Robotics Programming  ___________  CR  ___________  GR  __
      CIS 210: Intro to Cybersecurity  ___________  CR  ___________  GR  __
      CIS 220: Cybersecurity Concepts  ___________  CR  ___________  GR  __
      CIS 303: Local Area Networks  ___________  CR  ___________  GR  __
      CIS 305: Artificial Intelligence in Dec. Making  ___________  CR  ___________  GR  __
      CIS 310: Natural Language Processing  ___________  CR  ___________  GR  __
      CIS 312: Special Topics in Computing  ___________  CR  ___________  GR  __
      CIS 318: Autonomous Robotics Programming Alg.   ___________  CR  ___________  GR  __
      CIS 323: Cyber Forensics and Incident Response  ___________  CR  ___________  GR  __
      CIS 330: Information Systems Programming  ___________  CR  ___________  GR  __
      CIS 333: Info. Systems Auditing & Security  ___________  CR  ___________  GR  __
      CIS 362: Programming for Two-Dimensional Games  ___________  CR  ___________  GR  __
      CIS 363: Programming for Three-Dimensional Games  ___________  CR  ___________  GR  __
      CIS 370: Server Side Web Programming  ___________  CR  ___________  GR  __
      CIS 377: Computer Graphics  ___________  CR  ___________  GR  __
      CIS 403: Data Communications  ___________  CR  ___________  GR  __
      CIS 406: Mobile Application Development  ___________  CR  ___________  GR  __
      CIS 422: Internship (1-6)  ___________  CR  ___________  GR  __
      CIS 433: Security Management  ___________  CR  ___________  GR  __
      CIS 435: Machine Learning  ___________  CR  ___________  GR  __
      CIS/ MGMT 470: Project Management  ___________  CR  ___________  GR  __
      DA 412: Special Topics in Data Analytics  ___________  CR  ___________  GR  __
      MATH 271: Calc. w/ Analytic Geometry II  ___________  CR  ___________  GR  __
      MATH 272: Calc w/ Analytic Geometry III  ___________  CR  ___________  GR  __
      MATH 300: An Intro to Advanced Mathematics  ___________  CR  ___________  GR  __
      MATH/CIS 340: Discrete Math. Structures  ___________  CR  ___________  GR  __
      MATH 360: Numerical Methods in Math I  ___________  CR  ___________  GR  __
      MATH 370: Linear Algebra  ___________  CR  ___________  GR  __
      MGMT 420: Operations Research  ___________  CR  ___________  GR  __

VI. FREE ELECTIVES
   Credits to total 120 credits for graduation.
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________
      __________:  ______________________  __________:  __________:  __________:  __________:  __________

FLAGS - Record below courses used to meet Gen. Ed. requirements:
   First Year Values (V)
   Second Values (S)
   Quantitative Reasoning (Q)
   Writing Intensive (W)

- Recommended choices for students planning to pursue graduate work in computer science.

NOTES:
1. 1-6 credits of CIS 422 may be applied to Electives in Major.
University Policies Relating to Academic Requirements

• A student is obligated by those requirements which are in effect at the time of his/her matriculation, but if he/she changes majors he/she is obligated by the requirements in effect at the time of the change. If a student has been out of school for more than two years and is readmitted, he/she is treated as a new student for requirement purposes.

• A minimum of 120 credits must be presented for graduation, of which at least 30 of the last 60 credits must have been earned in residence.

• No more than 2 credits of Personal Performance (III.B) by be counted for graduation.

• Upon presentation of for DD 214, the university grants a maximum of 4 credits in Health and Physical Education for active military service of 6 months or more. Credit is normally given for NFSS 111 (2 credits) and 2 activity hours of 1 credit each.

• Maximum loads: Students with a GPA of 3.0, 21 hours; students in good standing*, 18 hours; students on probation, 15 hours.

    * To be in good standing, undergraduate students must maintain a minimum cumulative grade point average of 2.0.

• After a student has earned a minimum of 30 semester hours of credit and if he/she is in good academic standing, he/she may schedule a maximum of six courses of 18 credit hours for Credit-No Record. One such course may be taken each semester. Courses in the student’s major may not be taken on a Credit/No Record basis.

• Course credits not to exceed 18 semester hours may be earned by departmental examination at Clarion.

• All candidates for an undergraduate degree must be in good academic standing (i.e., have a cumulative GPA of 2.0).

• Students may earn two degrees (B.A., B.S., BSED, BSBA), simultaneously or in sequence, by completion of 30 approved credits hours beyond those taken for one degree.

• Students may take a double major by satisfying the major requirements of two programs within a single degree. Ordinarily a double major (two majors within one degree) can be effected in 120 hours, but it is not possible to take two majors in different degree programs (e.g., B.S. in Biology and BSED in Biology) unless the 30 hour requirement for a second degree, referred to in the preceding statement, is satisfied.

• Students may obtain teacher certification in conjunction with many degrees by completing the required course work in professional education. For more information, contact the Dean of the College of Arts, Education and Sciences, or the Director of Education. With careful course selection, ordinarily no more than 120 credits will be required.

Academic Policy information can be found on the Registrar’s web page at the following link:
http://www.clarion.edu/academics/registrar-office/academic-policies/index.html

No changes since Fall 2021

B.S. Computer Science