The Department of Journalism, Media and Computing prepares students for professional careers and/or graduate study in a wide range of mass media and computing fields including, news, public relations, advertising, video, photography, graphic design, and software development. Courses emphasize development of strong writing, critical thinking, visual communication and multimedia skills. Students gain experience through internships, The Creightonian newspaper both in print and online, and student professional organizations.

**JOURNALISM, MEDIA AND COMPUTING**

Chair: M. Carol Zuegner  
Department Office: Hitchcock Communication Arts Building, Room 209

This department offers the following certificate program to students in the College of Professional Studies:

- Computer Science (http://catalog.creighton.edu/undergraduate/professional-studies/computerscience-cert)

This department offers the following associate degree to students in the College of Professional Studies:

- Computer Science (http://catalog.creighton.edu/undergraduate/professional-studies/computer-science-as)

**Courses**

CSC 121. Computers and Scientific Thinking. 3 credits. FA, SP  
An introduction to science and scientific reasoning from a perspective that integrates computer science and the natural sciences. Students will gain a basic understanding of computer technology and how computers are used in various scientific disciplines. Methods and applications from the biological sciences will be emphasized, providing practical insights into how biologists utilize computers and computer modeling in solving problems.

CSC 221. Introduction to Programming. 3 credits. FA, SP  
A first course in computer programming and problem solving, with an emphasis on multimedia applications. Specific topics include algorithm development, basic control structures, simple data types and data structures, and image/sound processing.

CSC 222. Object-Oriented Programming. 3 credits. SP  
A second course in computer programming, emphasizing the object-oriented approach to software development. Specific topics include object-oriented design, classes and objects, encapsulation, list processing, and recursion. P: CSC 221.

CSC 321. Data Structures. 3 credits. FA  
An introduction to fundamental data structures used in solving problems, including the programming and mathematical concepts required to implement and analyze data structures. Specific data structures include lists, stacks, queues, and linked structures. Supporting concepts include logic, proof techniques, and basic graph theory. P: CSC 222.

CSC 414. Introduction To Computer Organization. 3 credits. FA  
An introduction to the organization and design of modern computing devices. Topics include basic addressing modes, instruction formats and interpretation, I/O devices, memory organization, and microprogrammed control. P: CSC 221.

CSC 421. Algorithm Design and Analysis. 3 credits. SP  
An advanced problem-solving course that focuses on the design, implementation, and analysis of algorithms. Specific algorithmic approaches include divide-and-conquer, greedy, backtracking, and dynamic programming. The connections between algorithms and data structures, such as trees and hash tables, are highlighted. P: CSC 321.

**Associate Degree in the College of Professional Studies**

Students who think they may teach Journalism in secondary schools must consult with the Education Department, the Journalism, Media and Computing Department, and the appropriate agency in the state in which they intend to teach.
CSC 427. Data Structures And Algorithm Analysis. 3 credits.
An advanced problem-solving course that focuses on the design and analysis of data structures including lists, trees, and hash tables, searching and sorting, and graph algorithms. In addition, approaches to problem solving such as divide-and-conquer and dynamic programming are covered. P: CSC 222, CSC 321.

CSC 444. Human Computer Interaction. 3 credits. OD, SP
A survey of topics and techniques related to the design of software and hardware interfaces. In studying systems that interact effectively with humans, the investigator must understand principles of human behavior, physiological and psychological characteristics of human cognition, ergonomics, information systems, and interface design.

CSC 448. Freedom and Security in a Digitally-Divided Society. 3 credits. (Same as SRP 448)
The concepts of Freedom and Security take on global implications when applied to the Cyber world. This course examines how power is gained and waged through computer technology, and how Freedom and Security are moral banners for the promulgation of this power. The student will gain knowledge and experience regarding how public and private sectors, governments and military institutions implement offensive and defensive Cyber strategies, countered with strategies and tactics waged by loosely-organized “freedom-fighters.” The student will then be invited to apply the effects of this struggle to the problem of the Digital Divide. P: PHL 250 or THL 250 and One Magis Core Critical Issues in Human Inquiry course; Sr. stdg.

CSC 493. Directed Independent Readings. 1-3 credits.
A directed reading course investigating current topics in computer science. May be repeated for credit to a limit of six hours. P: IC.

CSC 495. Directed Independent Study. 1-3 credits.
A directed study course investigating current topics in computer science. May be repeated for credit to a limit of six hours. P: IC.

CSC 497. Directed Independent Research. 1-3 credits.
A research project under the guidance of a member of the faculty. A student may complete up to three credit hours of CSC 497 and CSC 499 combined. P: IC.

CSC 499. Directed Internship. 1-3 credits.
Students gain professional experience by placement in a computing company or information technology department on a part-time basis for one semester. Students will work closely with a faculty advisor to define the project, identify its academic content, and report on its results. A student may complete up to three credit hours of CSC 497 and CSC 499 combined. P: IC.

CSC 515. Computer Architecture. 3 credits. OD
An advanced study of the architecture of computer systems. Specific topics include system components, microprogramming, parallel computers, pipeline and vector processing, and VLSI. P: CSC 414.

CSC 525. Theory of Computation. 3 credits. OD
A study of models of computing and the theoretical limitations of computation. Specific topics include formal grammars, finite state machines, Turing machines, and computability. P: CSC 421.

CSC 533. Programming Languages. 3 credits. SP
A survey of modern languages, including their design and implementation. Specific topics include declarative programming, procedural programming, scripting, syntax and semantics, memory management, data types, and control structures. P: CSC 321.

CSC 535. Introduction To Compiler Design. 3 credits. OD
Review of program language structures, grammars, translation, loading, execution and storage allocation; compilation of simple structures. Organization of a compiler including compile-time symbol tables, lexical scan, syntax and semantic analyzer, object code generation, error diagnostics; object code optimization techniques; overall design. P: CSC 527.

CSC 538. Computer Networks. 3 credits. OD
A study of the foundational techniques of computer networking, with special emphasis on current technologies and architectures. Specific topics include local area networking, network topologies, file services, and security. P: CSC 414.

CSC 539. Operating Systems. 3 credits. OD
A study of the design and implementation of systems software for controlling the hardware and software components of computers. Specific topics include memory management, virtual memory, CPU scheduling, and file structures. P: CSC 321.

CSC 542. Relational Database Design. 3 credits. OD
A survey of techniques for designing and implementing databases using a relational model. Specific topics include relational algebra, SQL, normal forms, database design, concurrency control, and error recovery. P: CSC 321.

CSC 548. Software Engineering. 3 credits. FA, SP
A project-based course that utilizes industry-proven methodologies for the design, implementation, and management of software projects. Specific topics include team coordination, UML modeling, design specifications, version control, reusability, and testing. P: CSC 321.

CSC 550. Introduction To Artificial Intelligence. 3 credits. OD
A survey of foundational concepts and current research in artificial intelligence. Specific topics include knowledge representation, search methods, expert systems, machine learning and perception, neural networks, and emergent systems. P: CSC 421.

CSC 551. Web Programming. 3 credits. FA
An advanced study of Internet and Web protocols and the integration of programming techniques with a Web interface. Both client-side and server-side programming are covered, with topics including HTML, client-side scripting, server-side programming via the Common Gateway Interface, and current development technologies. P: CSC 222 or CSC 121 and CSC 221.

CSC 555. Computer Graphics. 3 credits. OD
This course covers the algorithms and technology for developing and manipulating graphical images on a computer. Topics include graphics display devices, digital storage, interactive versus passive graphics, and the mathematics of 2-dimensional and 3-dimensional transformations. P: CSC 421.

CSC 581. Mobile App Development. 3 credits.
This project-based course presents the fundamental concepts and techniques of mobile application development. Specific topics include modern design methodologies, mobile resource limitations, development tools, and project management. P: CSC 221.

CSC 590. Special Topics. 3 credits.
This course provides an in-depth examination of one or more current topics in computer science, through a combination of lecture, discussion and student presentations. P: IC.
CSC 599. Senior Capstone. 3 credits.
A survey of foundational concepts and current research in artificial intelligence. Specific topics include knowledge representation, search methods, expert systems, machine learning and perception, neural networks, and emergent systems. P: Sr. stdg. or IC.

GDE 300. Concept Sketch Development. 3 credits.
This course explores the creation of digital concept sketches from storyboards and websites to product design and branding concepts.

GDE 324. Digital Foundations for the Web. 3 credits.
This course teaches the basics of designing graphics and imagery and then how to publish it online by creating websites. In addition, students learn to use a content management system such as Wordpress.

GDE 370. Video and Photo. 3 credits. FA
An introduction to beginning digital video and photography as it relates to journalism. Students will effectively use still and video and other new media forms including the fundamentals of shooting (including composition, lighting, audio, etc) and editing with the goal of effective storytelling, including creating a short mini-documentary.

GDE 374. Digital Video. 3 credits. SP
Students learn how to shoot, produce and edit digital video short format projects for online television and mass media distribution. P: Journalism, Informatics & Computing Sciences, Graphic Design, and Digital Design and Development majors only; GDE 370 or IC.

GDE 375. Photojournalism I. 3 credits. FA
The course introduces photography as a means of reporting the news, including the use of film and/or digital cameras to prepare photographs for print or Web publication.

GDE 376. Photojournalism II: Picture Editing. 3 credits.
The course examines the principles of design for newspapers and magazines with an emphasis on using photographs in the design. P: GDE 375.

GDE 377. Photojournalism III: Editorial Illustration. 3 credits. FA
The classes and assignments in the studio-lighting course are structured to the type of assignments a working photojournalist would receive, including portrait, fashion, food product and editorial illustration. P: GDE 375.

GDE 380. Graphic Design I. 3 credits. FA, SP, SU
This course explores the creation of digital concept sketches from storyboards and websites to product design and branding concepts. P: GDE 324.

GDE 381. Graphic Design II. 3 credits. FA, SP
The course uses a variety of computer graphic tools to develop skills and creativity in illustrating editorial and visual ideas. Students will work with and combine visual elements from photographs and artwork. P: GDE 380.

GDE 382. Web Design. 3 credits. FA, SP, SU
The course introduces the design of online publications, including elements of online layout, typography and graphics to create well-designed web sites. P: GDE 324 and CSC 121.

GDE 385. Computer Illustration. 3 credits.
Illustrating editorial and visual concepts using the computer. Students will work digitally and combine visual elements from photographs, artwork and various imaging, but will focus on creating original raster and vector illustrations.

GDE 410. Motion Graphics. 3 credits.
Learn to create static graphics with the intent on animation. Create typography and motion/moving graphics, including storyboards, web preparation, and preparation for video. Each student will pitch ideas and discuss with class, and participate in critiques in order to improve content and motion graphic projects. Students will learn to quickly develop concepts and explain their ideas via digital concept sketches. P: GDE 380 and GDE 370.

GDE 423. Interaction Design. 3 credits. FA
The course examines interactive media aesthetics and concerns. The course explores techniques in designing multimedia for the Web and mass media distribution. P: GDE 382.

GDE 424. Typography and Advanced Projects. 3 credits. FA, SP
The course is an intense examination of the use of typography in both historical and modern contexts. Students will learn effective ways to utilize type in a variety of digital and print media, with lectures in aesthetic, strategic and technical use of final projects that will showcase the strategic use of appropriate custom digital and hand-rendered typography. P: GDE 380.

GDE 425. 3D Digital Design. 3 credits. SP
An advanced 3D computer graphics course that creates virtual 3D designs for prototyping on 3D printers or other delivery methods. Students will learn the basics of designing in three dimensional space. P: GDE 324.

GDE 455. Projects in Communication. 1-3 credits. FA, SP, SU (Same as JRM 455)
Students develop a project in any of the mass media that is approved by a faculty member. The course may be repeated until a maximum of six credit hours has been accrued. Graded Satisfactory/Unsatisfactory. P: IC.

GDE 474. Mini-Documentary Filmmaking. 3 credits. SP
Learn to create mini-documentaries collaboratively as a class on a 15-25 minute documentary project. This course advances all of the concepts begun in the videos classes, but culminates in a professional-level film that can be submitted to student film festivals. Advanced shooting, lighting, audio and editing techniques will be covered. P: GDE 370.

GDE 493. Directed Independent Readings. 1-3 credits. FA, SP, SU (Same as JRM 493)
Students work with a faculty member who agrees to supervise the directed independent readings. May be repeated until a maximum of six credit hours has been accrued. P: IC.

GDE 590. Special Topics. 3 credits.
This course provides an in-depth examination of one or more current topics in graphic design and media, through a combination of lecture, discussion and student presentations. P: IC.

GDE 599. Senior Capstone. 3 credits.
The Graphic Design Senior Capstone course is designed specifically for graphic design majors. All students will create a major design project that integrates and demonstrates the various visual communication skills they have learned over the course of the major. The project will include written proposals and several stages of group presentation and critique. The project will include materials both online and printed, and should have a collaborative component that involves working with either a client or another student on a large scale project. Additionally, students will reflect on their experience in a blog setting, and engage in critical discussion on current professional practices and projects. P: Sr. stdg. or IC.
JRM 215. Introduction to Mass Communication Technology. 2 credits. FA, SP
This is an introductory course for majors in the Department of Journalism, Media and Computing. Students will learn how technological changes continue to shape the future of mass communications.

JRM 219. Media Writing. 3 credits. FA, SP, SU
Students learn basic news writing forms and techniques and develop their interviewing and writing skills in gathering and writing news and feature stories for the student newspaper. The course also introduces students to ethical, legal and other issues surrounding the role of media in a democratic society.

JRM 220. Professional Writing. 3 credits. SP
This course will teach students how to write major professional formats such as executive summaries, power point presentations, abstracts of technical articles, professional proposals, copy for posters and copy for web pages. Course work will include oral presentations and integration of writing and graphics. P: JRM 215; and one Magis Core Contemporary Composition course.

JRM 315. Public Relations and Advertising Principles. 3 credits.
This is a collaborative, team-taught class that will incorporate half a semester each of PR Principles and Advertising Principles. In both you will learn about fundamental principles of persuasion, targeting, advocacy work and how these two distinct but related fields work with audiences.

JRM 319. Media Writing. 3 credits.
Students learn basic news writing forms and techniques and develop their interviewing and writing skills in gathering and writing news and feature stories for the student newspaper. The course also introduces students to ethical, legal and other issues surrounding the role of media in a democratic society. P: One Magis Core Contemporary Composition course.

JRM 320. Professional Writing. 3 credits.
This course will teach students how to write major professional formats such as executive summaries, power point presentations, abstracts of technical articles, professional proposals, copy for posters and copy for web pages. Course work will include oral presentations and integration of writing and graphics. P: One Magis Core Contemporary Composition course.

JRM 321. Advanced Reporting. 3 credits.
The advanced course builds on skills and concepts developed in JRM 219, News Reporting. Students research and write in-depth news articles for publication in campus media and beyond, focusing on specialized forms of reporting about government, business and politics. The course also emphasizes using computer tools, documents, data collection and analysis in the reporting. P: JRM 219.

JRM 322. Feature Writing. 3 credits. FA
The course explores the art of writing numerous types of features for newspapers and magazines including personality profiles, in-depth examinations of issues and problems, reviews, columns, editorials and humor. Course will stress research, writing and analytical skill development. Students also learn free-lance writing techniques and methods. P: JRM 219 or IC.

JRM 326. Sportswriting. 3 credits. SP
This in-depth course in the art of sportswriting provides students with experience in covering sports. The topics include how to interview coaches and players, how to obtain and report on sports statistics and how to write a variety of sports features incorporating multimedia. P: JRM 219.

JRM 327. Social Media. 3 credits. FA, SP, SU
This course explores the development, art and practice of writing, editing and producing social media content over a range of platforms and networks in news, public relations and advertising. The course also will examine ethical and legal aspects of social media and its role in social justice. P: JRM 215.

JRM 331. Editing. 3 credits. FA, SP
The course introduces students to the fundamentals of preparing copy for publication by emphasizing grammar, punctuation, style, consistency, clarity and accuracy. Students learn to work with writers, to write headlines and captions, to develop infographics and to be aware of ethical, legal and taste considerations when editing. P: JRM 219.

JRM 335. History of American Mass Media. 3 credits. FA, SP
The course surveys mass media in America and its role in society from the forerunners of the newspaper, to contemporary newspapers and magazines, the development of broadcasting and cable and current trends in electronic and print media. P: Soph. stdg. or IC.

JRM 341. Public Relations Writing. 3 credits. SP, SU
The course offers an in-depth examination and hands-on experience in writing the various forms and formats involved in public relations including press releases, multimedia, photos, professional journals, press conferences and press briefings, special events and crisis situations. P: JRM 315 or IC.

JRM 347. Advertising Campaigns I. 3 credits. FA, SU
This course provides integrated and comprehensive experiences in advertising decision making. Experience gained in advertising principles, and advertising media writing is culminated in planning, executing and proposing a comprehensive advertising campaign. Working in teams, students will approach and solve advertising problems as an agency would for a client. May be repeated up to three times. P: JRM 315 or IC.

JRM 350. Public Relations Campaigns. 3 credits. FA
This course provides integrated and comprehensive experiences in integrated advertising and public relations decision making. Experience gained in JRM 315 is used to execute a comprehensive integrated public relations and advertising campaign. P: JRM 315.

JRM 365. International Mass Communications. 3 credits. FA, SP, SU
The course examines the role of the mass media in an era of globalization and mass media’s impact on societies throughout the world, emphasizing the issue of freedom of expression and of the press. The countries studied reflect areas of special contemporary interest.

JRM 424. Typography & Advanced Projects. 3 credits.
The course is an intense examination of the use of typography in both historical and modern contexts. Students will learn effective ways to utilize type in a variety of digital and print media, with lectures in aesthetic, strategic and technical use of final projects that will showcase the strategic use of appropriate custom digital and hand-rendered typography. P: GDE 380.

JRM 433. Advertising Copy Writing. 3 credits. FA
The course explores techniques in writing advertising copy for all media using practical assignments. P: JRM 315.

JRM 438. Information Ethics. 3 credits. FA, SP, SU
This course explores the theoretical and practical ethical questions of mass communication as judged through the application of moral principles. Discussion of issues via case studies and simulation. P: One Magis Core Ethics course.
JRM 440. Media Research. 3 credits. FA, SP
This course is designed to teach students to conduct or understand research methods that are often used in the mass communication industry. Discussion covers and applies mass communication theories, sampling methodologies, statistical analysis, and interpretation of data. The course also introduces students to qualitative research methods common in mass communication research. P: Mathematical Reasoning course; Junior standing.

JRM 455. Projects in Communication. 1-3 credits. FA, SP, SU (Same as GDE 455)
Students develop a project in any of the mass media that is approved by a faculty member. The course may be repeated until a maximum of six credit hours have been accrued. Graded Satisfactory/Unsatisfactory. P: IC.

JRM 477. Advanced News Production. 1-3 credits. FA, SP
Students gain experience by working for one of the department’s student media including The Creightonian or Creightonian Online. May be repeated for up to nine credit hours. P: IC.

JRM 479. Graphic Design Internship. 1-3 credits.
Students will gain professional experience in graphic design through working in supervised graphic design jobs. Graded Satisfactory/Unsatisfactory. P: GDE 380 and IC.

JRM 481. Broadcast and Video Internship. 1-3 credits.
Students gain professional experience through working for a radio, television or cable organization on a part-time basis for a semester or during an interterm period on a full-time basis. Graded Satisfactory/Unsatisfactory. P: IC.

JRM 483. Public Relations Internship. 1-3 credits. FA, SP, SU
Students gain professional experience by placement in a public relations department or agency on a part-time basis for one semester (or appropriate period during summer or interterm periods on either a full- or part-time basis) to learn how particular problems in public relations are handled and the methods used by that department or agency to communicate with its various publics. May be repeated. Graded Satisfactory/Unsatisfactory. P: IC.

JRM 485. News Internship. 1-3 credits. FA, SP, SU
Students gain professional experience with placement in news medium or agency on a part-time basis for one semester (or appropriate period during summer or interterm periods on either a full- or part-time basis) to gain practical experience in news gathering, writing and editing. May be repeated. Graded Satisfactory/Unsatisfactory. P: IC.

JRM 487. Advertising Internship. 1-3 credits. FA, SP, SU
Students gain professional experience by placement in a communications medium or agency on a part-time basis for one semester (or appropriate period during summer or interterm periods on either a full- or part-time basis) to gain practical experience in the procedures and functions of planning, preparing, placing and selling advertising messages and materials. May be repeated. Graded Satisfactory/Unsatisfactory. P: IC.

JRM 493. Directed Independent Readings. 1-3 credits. FA, SP, SU (Same as GDE 493)
Students work with a faculty member who agrees to supervise the directed independent readings. May be repeated until a maximum of six credit hours has been accrued. P: IC.

JRM 529. Law of Mass Communication. 3 credits. FA, SP, SU
The course examines the legal limitations and privileges affecting publishing and broadcasting including libel, copyright, constitutional guarantees and restrictions on freedom of the press, the FCC, FTC, etc. P: Jr. stdg.

JRM 599. Senior Capstone: Entrepreneurial Media. 3 credits.
This project-based capstone is for journalism seniors in the news, advertising, public relations tracks. The course explores entrepreneurship and innovation in a media landscape that is constantly evolving. The course focuses on concepts of entrepreneurship and new media business models. Each student research, design and pitch an entrepreneurial idea that integrates content from his or her major courses with new content on entrepreneurship. P: Sr. stdg. or IC.