

developing a curriculum plan. Further details of typical course sequences in the different emphases are described in the Biology Graduate Handbook available for download from the Graduate Student section of the Biology website <http://bio.nmsu.edu/grads/>.

The Behavioral, Ecological and Evolutionary Biology program is appropriate for graduate students who wish to specialize in areas of biology that study the various processes that encompass the behavior, ecology, and evolution of living and extinct taxa.

The Cell and Organismal Biology program is appropriate for all Graduate students who wish to emphasize those areas of biology that integrate function and structure in cells, tissues, and organisms.

The Microbiology curriculum is appropriate for graduate students who wish to specialize in areas of biology that study the various processes that occur in microbes (bacteria, viruses, fungi, and protists) such as their physiology, ecology, development, or evolution.

Graduate students may also take a minor in other graduate departments and programs.

## CHEMISTRY AND BIOCHEMISTRY

Department website: <http://www.chemistry.nmsu.edu/>  
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W. Quintana, Ph.D. Department Head, Ph.D. (Pennsylvania)—inorganic chemistry, boron chemistry, chemical education; J.B. Arterburn, Ph.D. (Arizona)—organic chemistry, synthetic medicinal and chemical biology; G. A. Eiceman, Ph.D. (Colorado-Boulder)—analytical chemistry, gas and liquid chromatography, mass spectrometry; A. Gopalan, Ph.D. (Ohio State University)—organic chemistry, synthetic methods, applications of enzymes in asymmetric synthesis; J. W. Hemdon, Ph.D. (Princeton)—organic chemistry, organo-transition metal complexes, synthesis of biologically important cyclic compounds; K. Houston, Ph.D. (University of Texas- MD Anderson)—biochemistry, molecular mechanisms of hormone action in tumorigenesis; M. D. Johnson, Ph.D. (New Mexico State University)—inorganic chemistry, kinetics, reaction mechanisms of transition metal complexes; A. S. Lara, Ph.D. (New Mexico State University)—analytical chemistry, exploitation of clays for remediation of environmental pollutants; F. Li, Ph.D. (Minnesota)—inorganic chemistry, bioinorganic chemistry, small molecule activation; S. L. Lusetti, Ph.D. (Wisconsin)—biochemistry, cell metabolism, disease etiology; B. A. Lyons, Ph.D. (Cornell University)—biochemistry, nmr spectroscopic studies of signal transduction pathways in breast cancer; W. A. Maio, Ph.D. (Johns Hopkins University)—organic chemistry, total synthesis of marine natural products and explorations of new chemical methods; synthesis of lactones and lactams, artemisinin-based antimalarial dimers, and total synthesis of (+)-iriomoteolide 1a; G. D. Rayson, Ph.D. (Texas-Austin)—analytical chemistry, spectroscopy; A. Rowland, Ph.D. (University of Utah)—toxicology, regulation of the orphan cytochrome P450 drug metabolism enzyme, CYP2S1, and its impact of human lung disease; S. N. Smimov, Ph.D. (Novosibirsk State University)—physical chemistry, photo-induced charge separation; D. E. Smith, Ph.D. (California-Berkeley)—physical chemistry, molecular dynamics in condensed phase; H. Wang, Ph.D. (Wayne State)—physical chemistry, reaction kinetics in complex systems; E.T. Yuki, Ph.D. (Oregon Health and Science University)—biochemistry, x-ray crystallography and spectroscopy of bacterial metalloproteins; C. G. Zoski, Ph.D. (Queens University, Canada)—analytical chemistry, theoretical and experimental electrochemistry

**DEGREE: Master of Science**  
**MAJOR: Chemistry**

**DEGREE: Doctor of Philosophy**  
**MAJOR: Chemistry**

**MINORS: Biochemistry**  
**Chemistry**

The Department of Chemistry and Biochemistry offers programs leading to the M.S. and Ph.D. degrees in the areas of physical, organic, inorganic, biological, and analytical chemistry. Admission to these programs without deficiency is based on an undergraduate program essentially equivalent to that pursued by a chemistry or biochemistry major at this university. An entering student is encouraged to take the Graduate Record Examination (aptitude) to increase his or her chances for financial support. All foreign students must take GRE and TOEFL and must demonstrate adequate English speaking and writing skills.

Students who wish may take a minor in chemical toxicology or molecular biology. The core course work required of students entering with no previous graduate study in chemistry or biochemistry consists of basic core courses

completed in one of the following options: (i) two courses chosen respectively from two of the five major areas represented in the department apart from a student's elected field of thesis research; or (ii) one course chosen from the five major areas apart from the student's elected field of thesis research plus one graduate-level course in a discipline outside the Department of Chemistry and Biochemistry. A master's candidate will plan an appropriate program of further study with his or her advisor and is also required to prepare a thesis. The thesis requirement may be waived upon application to the department head, after completion of the doctoral comprehensive examination requirements. A chemistry student who successfully completes the Ph.D. qualifying examination will begin writing the cumulative examinations, which constitute the written portion of the comprehensive examination. A biochemistry student who successfully completes the Ph.D. qualifying examination will begin preparation of a research proposal which will be orally defended for completion of the comprehensive examination. After completion of the qualifying exam, a doctoral committee is formed to assist the student in planning a program appropriate to his or her background and goals. Since research is central in both the master's and doctoral programs, the early selection of a research advisor is encouraged. The student is expected to participate in the colloquia and seminar programs. Financial support is available to graduate students in chemistry and biochemistry through numerous teaching and research assistantships as well as federally supported traineeships and fellowships. Inquiries regarding these opportunities should be directed to the head of the department.

## COMMUNICATION STUDIES

Department website: <http://web.nmsu.edu/~nmsucomm/>  
(575) 646-2801  
khacker@nmsu.edu;

K. Hacker, Department Head, Ph.D. (Oregon)—new media networking, political communication, national security communication; G. Armfield, Ph.D. (University of Missouri-Columbia)—organizational communication, communication theory; I. Dylko, Ph.D. (Ohio State University)—communication theory, political communication, communication technology, research methods; J. Flora, Ph.D. (Kansas)—communication; A. Hubbell, Ph.D. (Michigan State)—organizational communication, health communication; E. Morgan, Ph.D. (University of Massachusetts-Amherst)—communication and culture, environmental communication

**DEGREE: Master of Arts**  
**MAJOR: Communication Studies**

**MINORS: Communication Studies**  
**Communication and National Security**

The Master of Arts in Communication Studies provides students with a social scientific approach to the study of human interaction, using quantitative and qualitative methods. Our curriculum is designed to explore how oral communication takes place interpersonally, within organizations, within our political system, and between and within cultures. Students take courses in interpersonal communication, organizational communication, political communication and/or cultural communication. All graduate students take courses in communication theory and research methods. In addition, students can take courses in topic areas such as conflict management, small group communication, persuasion, and nonverbal communication.

The program offers a wide variety of courses allowing students an opportunity to select topics pursuant to their special interests. In addition to courses, students have the opportunity to obtain practical experience by participating in professional activities offered by the department; for example, graduate teaching assistantships, research, and colloquia.

**DEGREE: MASTER OF ARTS**  
**MAJOR: COMMUNICATION STUDIES**

The department offers both thesis and non-thesis options in its Masters of Arts program. Both options require a minimum of 36 credits, which includes not only Communication courses but courses from outside the department. The thesis option requires at least 30 credits of coursework, 3-6 credits of thesis (COMM 599), and an oral defense of the thesis and coursework. The non-thesis option requires 36 credits of coursework, plus a comprehensive written examination, followed by an oral defense. Both options require a minimum of 30 credit hours of Communication courses.

**Both of the following courses are required:**

COMM 505	Research Methods	3
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COMM 583	Seminar in Theories of Communication	3
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Students must take three of the following four courses:

COMM 540	Seminar in Political communication	3
COMM 570	Seminar in Organizational Communication	3
COMM 576	Seminar on Communication and Culture	3
COMM 584	Seminar in Interpersonal Communication	3

#### COMM Electives (15 credits)

	Electives in Related Fields (graduate levels; numbered 450+)	3-6
	Thesis Option: COMM 599, Thesis	3-6
	Non-thesis Option: Additional Graduate COMM Electives	3-6

A GPA of 3.0 or better must be maintained overall and grades in each course must be a B- or better.

#### Entrance requirements for graduate study in communication studies

The Graduate Record Exam (GRE) General Test is not required for admission; however, high GRE scores will strengthen a candidate's application and are highly regarded in the awarding of Graduate Assistantships. Students wishing to enroll in the Master program in Communication Studies must meet the following criteria:

1. Hold a BS degree, from an accredited institution of higher learning; Social Science disciplines are preferred
2. Hold a minimum grade point average of 3.25

#### To apply for an assistantship, please submit the following application materials

- Three letters of recommendation
- Current Vitae/Resume
- 750 word statement of intent
- A sample of scholarly writing

#### MINOR: COMMUNICATION STUDIES

Students who wish to take a minor in Communication Studies will need to accumulate a minimum of 9 graduate credits in Communication Studies courses. Students are encouraged to contact the Communication Studies Department Chair for directions in the selection of courses.

#### MINOR: COMMUNICATION AND NATIONAL SECURITY

This minor is aimed at graduate students who seek employment in national security, intelligence, international business, military affairs in other nations, and other positions which require knowledge of how communication affects the national image of the United States and how Americans communicate with members of other cultures about political matters. Graduate students will be required to write a special analysis for each course that is not required of the undergraduate students. Each graduate student will also be required to present a one-hour lecture on an area of research specialization.

Total required credit hours: 12.

Students will take three of four courses below plus one outside course approved by the department. The list below is our expected course rotation.

COMM 555	Seminar Fundamentals of Communication and National Security	3
COMM 556	Seminar Communication and the Intelligence Cycle	3
COMM 557	Seminar Strategic Communication and Public Diplomacy	3
COMM 558	Seminar Intercultural Communication and National Security	3

The courses from other departments can include special topics courses or related courses relevant to this minor, as well as regular courses such as the ones listed below.

GEOG 501	Research Design and History of Geographic Thought	3
GOVT 562	Advanced Issues in Security and Intelligence Studies	3
GOVT 568	Advanced Intelligence Studies	3
HIST 561	Islam and the West: Cultural Contacts, Conflicts and Exchanges	3
SOC 478	Sociology of Development and the World	3

	System	
SOC 489	Globalization	3

GEOG 501: should focus research project on national security  
HIST 561, pre-requisites or co-requisites include HIST 221G or HIST 222G

## COMPUTER SCIENCE

Department website: <http://www.cs.nmsu.edu>

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*E. Pontelli, department head, Ph.D. (New Mexico State)– parallel processing, logic programming, knowledge representation, bioinformatics, assistive technologies; H. Cao, Ph.D. (Hong-Kong)– data mining, databases, data integration; J. Cook, Ph.D. (Colorado)– software engineering, component-based systems; Y. Jin, Ph.D. (Texas A&M)– computer architectures, interconnection networks, multicore architectures; H. Leung, Ph.D. (Penn State)– automata theory; S. Misra (Arizona State)– communication networks, social networks, high performance computing, security and privacy; I. Pivkina, Ph.D. (Kentucky)– artificial intelligence, computer science education, data mining; M. Song, Ph.D. (Washington)– statistical computing, systems biology, computer vision; Z. Toups, Ph.D. (Texas A&M)– digital games, human-computer interaction, mixed reality; S. C. Tran, Ph.D. (Texas-El Paso)– artificial intelligence, knowledge representation, planning, logic programming, non-monotonic reasoning; W. Yeoh (Southern California)– artificial intelligence, heuristic search, distributed constraint reasoning*

#### Support and Adjunct Faculty:

*S. Cooper, Ph.D. (New Mexico State)– computer networks; R. T. Hartley, Ph.D. (Brunel)– programming systems, computer music; J.J. Pfeiffer, Jr., Ph.D. (Washington)– visual programming; E. Steiner, Ph.D. (Oklahoma State)– computer science education*

**DEGREE: Master of Science**

**MAJOR: Computer Science**

**DEGREE: Master of Science**

**MAJOR: Bioinformatics**

**DEGREE: Doctor of Philosophy**

**MAJOR: Computer Science**

**MINOR: Computer Science**

#### Mission of the Department

The mission of the Department of Computer Science at New Mexico State University is to provide formal education in the core disciplines of computer science, as well as to prepare our graduates for research, development and academic careers. The department offers specific expertise in several research areas, such as bioinformatics, artificial intelligence and knowledge representation, software engineering and programming languages, computer and wireless networks, data mining and machine learning game design and human-computer interaction, high performance computing, theory of computing, computer architectures, and assistive technologies. A number of laboratories have been established to coordinate research activities, including the Knowledge Representation, Logic and Advanced Programming (KLAP) laboratory, the Programming Languages, Environments, and Automated Software Engineering (PLEASE) laboratory, the Game Development laboratory, the Database Management and Data Mining laboratory, and the Network and Systems Optimization laboratory. The Department members are also directing the CREST Center for Research Excellence in Bioinformatics and Computational Biology, offering educational and research opportunities in bioinformatics.

#### Entrance Requirements for Graduate Study in Computer Science

The Graduate Record Exam (GRE) General Test is not required for admission; however, high GRE scores will strengthen a candidate's application and are highly regarded in the awarding of Graduate Assistantships. To be admitted without undergraduate deficiencies, an entering student must have completed undergraduate preparation substantially equivalent to that required for the Bachelor of Science degree in Computer Science at New Mexico State University; in particular, this includes courses equivalent to C S 172, C S 271, C S 272, C S 273, C S 278, C S 370, C S 371, C S 372, C S 471, C S 473 and C S 474. Deficiencies should be satisfied as early in the student graduate program as possible, through the regular undergraduate courses, the C S 460-469 transition courses, or through tests administered by faculty members in the relevant areas.