

TELECOMMUNICATION TC

Department of Telecommunication, Information Studies and Media College of Communication Arts and Sciences

- 100 The Information Society**
Fall, Spring, Summer. 3(3-0)
Technological, industry and social trends in the information society. Media and communication technology industries. Social policy involving information technologies and information services, including television, radio, cable TV, telephone, the Internet, and new Media.
- 110 Understanding Media**
Fall, Spring. 3(3-0)
Knowledge needed to critique and analyze various media. History of media content, basic research methods with practical applications, and the ethics of media production.
- 191 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits in TC 191, TC 291, TC 391 and TC 491.
Contemporary issues in media and communication technology.
- 201 Introduction to Media and Communication Technology**
Fall, Summer. 3(3-0) P: (TC 100 or concurrently) and ((CSE 101 or concurrently) or (CSE 131 or concurrently) or (CSE 231 or concurrently))
Operational principles and applications of media and communication technologies.
- 210 Media and Communication Policy**
Spring. 3(3-0) P: TC 100 or concurrently SA: TC 310
Overview of public policies affecting media, information and communication in the United States and abroad, such as regulation of network platforms, content, intellectual property rights, and media ethics.
- 242 The Digital Image**
Fall, Summer. 3(2-2) P: (TC 100 or concurrently) or (TC 110 or concurrently) R: Open to students in the Department of Telecommunication, Information Studies and Media.
Production and meaning of media images. Conceptual and technical use of the computer as a tool for the creation, acquisition and manipulation of media images. Development of a critical vocabulary for thinking and talking about media images.
- 243 Story, Sound, and Motion**
Spring, Summer. 3(2-2) P: ((TC 100 or concurrently) or (TC 110 or concurrently)) or (STA 110 and STA 113) R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or approval of department.
Storytelling in a digital environment. Sound and music recording and manipulation. Recording, processing, and editing moving images.
- 247 Three-Dimensional Design of the Virtual Form**
Fall, Spring. 3(2-2) P: TC 242 or (STA 110 and STA 113) R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Principles of 3D of computer graphics applied in cinema, games, illustration, design and sculpture. Use of 3D software to create and manipulate synthetic objects, materials, lights, and cameras.
- 291 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits in TC 191, TC 291, TC 391, and TC 491.
Contemporary issues in media and communication technology.
- 300 Economics of Media**
Fall. 3(3-0) P: TC 100 and (TC 210 or concurrently) SA: TC 200
Economics of traditional, new and emerging media, including radio, television, cinema, telephony, mobile communications, and the Internet.
- 331 Introduction to Interactive Media Design**
Fall, Spring. 3(2-2) P: (TC 201 or TC 242) and (CSE 101 or CSE 131 or CSE 231) R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization. SA: TC 241
Brainstorming, planning, implementing, and troubleshooting applications and interfaces for interactive media. Basic principles of programming for interactivity.
- 339 Digital Games and Society**
Spring. 3(3-0)
Cultural, technological, and design evolution of interactive entertainment. Current and historical digital game genres, content, audience, and industries for commercial and non-commercial games. Critical examination of empirical research concerning social impacts of digital games.
- 340 Introduction to Video and Audio**
Fall, Spring, Summer. 3(2-2) P: TC 201 or TC 243 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization. SA: TC 240
Professional video and audio techniques, technologies, standards, aesthetics, and procedures.
- 341 Film Style Production for Cinema and Television**
Fall, Spring. 4(2-4) P: TC 340 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Advanced film style planning, techniques, and aesthetic principles for cinema and television production.
- 342 Multi Camera Production for Television**
Fall, Summer. 4(2-4) P: TC 340 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Conceptualizing, designing, planning, producing, directing and evaluating multi-camera video programs.
- 343 Basic Audio Production**
Fall, Spring, Summer. 4(2-4) P: TC 340 R: Open to students in the Department of Telecommunication, Information Studies and Media.
Basic audio production techniques. In-depth audio and radio industry analysis. Media writing.
- 346 Web-Based Interactive Media**
Fall. 4(2-4) P: TC 331 RB: TC 242 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Design and development of informational, educational, and entertainment interactive digital media, particularly related to Internet applications.
- 347 Three-Dimensional Computer Animation**
Fall. 4(2-4) P: TC 247 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
How aesthetic skill, technical competency, and engaging performance are woven together to create compelling animation using 3D computer graphics. Use of industry standard software to create, manipulate and render synthetic characters and their environments.
- 349 Client-Side Web Development**
Fall. 4(2-4) P: TC 331 R: Open to students in the Department of Telecommunication, Information Studies and Media.
Development of basic web sites, services, and applications that employ primarily client-side technologies.
- 351 Producing For Cinema and Television**
Spring. 3(3-0) P: TC 340 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Conceptualizing, designing, planning, and developing projects for cinema and television.
- 356 Marketing Media Content and Services**
Fall. 3(3-0) P: (TC 201 or concurrently) and (TC 210 or concurrently) SA: TC 456
Marketing programming content across multiple delivery platforms including broadcast, cable, satellite, internet and mobile devices. Industry structure of creative and distribution methods, pricing and repurposing of content.
- 361 Information and Communication Technology Management**
Fall. 3(3-0) P: TC 201 RB: TC 210
Technologies and organizations that support data communications infrastructure. Case studies of businesses that develop the infrastructure.
- 362 Web Administration**
Spring. 3(2-2) P: TC 201 RB: TC 361 R: Open to students in the Department of Telecommunication, Information Studies and Media.
Administration of Web servers and the services necessary to support modern information applications.
- 365 Introduction to Network Management**
Fall. 3(3-0) P: TC 361 R: Not open to freshmen or sophomores. SA: TC 463
Telecommunication system planning, operation, and management. Overview of the different systems, network configurations, current market forces and how they factor into business plans for telecommunications networks.

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- 375 Social Impacts of New Media**
Fall. 3(3-0) P: TC 100 and TC 110
Conventional theories of mass media and emerging theories of interactive media processes and effects. Critical examination of empirical social science research concerning the role played by the media, current and new, in society.
- 376 Media Research**
Fall. 3(3-0) P: TC 100 and TC 110
Design, execution, and interpretation of audience research studies for conventional and emerging electronic media.
- 381 Media Consumer Behavior**
Spring. 3(3-0) P: TC 100 and TC 110 RB: TC 300 and TC 376
Practical and theoretical models of the behavior of media consumers.
- 391 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits in TC 191, TC 291, TC 391, and TC 491.
Contemporary issues in media communication and technology.
- 437 Video Compositing and Special Effects**
Fall. 4(2-4) P: TC 331 or TC 340 RB: TC 247 R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or approval of department.
Conceptual and technical use of animation and compositing software for television, cinema, and interactive media.
- 442 Design of Cinema and Television Projects (W)**
Fall, Spring, Summer. 4(2-4) P: (TC 342 or TC 341) and completion of Tier I writing requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Design and development of television and cinema projects in a team setting. Participation in a production cycle including planning, budgeting, design, proposal writing, production, testing, and evaluation. Issues of professionalism, ethics, and communication.
- 443 Audio Industry Design and Management (W)**
Fall, Spring. 4(2-4) P: (TC 343) and completion of Tier I writing requirement R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Advanced audio production specializing in multi-channel techniques. Industry focus on all aspects of the audio field.
- 444 Information Technology Project Management**
Spring. 3(3-0) Interdepartmental with Computer Science and Engineering and Information Technology Management. Administered by Information Technology Management. P: ITM 311 R: Open to seniors in the Information Technology Specialization.
Practical training and experiences in design, testing, and launch of new information technologies and systems.
- 445 Digital Game Design (W)**
Spring. 4(2-4) P: ((TC 331 or CSE 331 or STA 360) or TC 346) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization.
Design, architecture, and creation concepts related to the development of interactive digital games.
- 446 Advanced Interactive Media Workshop (W)**
Spring. 4(2-4) P: (TC 346) and completion of Tier I writing requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Advanced design and development of interactive digital media, particularly related to advanced Internet applications, mobile applications, and physical installations.
- 447 Advanced Three-Dimensional Animation Workshop (W)**
Spring. 4(2-4) P: (TC 347) and completion of Tier I writing requirement RB: TC 437 R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or approval of department. SA: TC 847
Design of advanced 3D computer graphic animation.
- 449 Server-Side Web Development (W)**
Spring. 4(2-4) P: (TC 349) and completion of Tier I writing requirement R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or approval of department.
Development of advanced Web sites, services, and applications that employ both client-side and server-side technologies.
- 450 Human Computer Interaction and User Experience Design (W)**
Fall. 4(2-4) P: ((TC 346 or concurrently) or (TC 349 or concurrently) or (TC 445 or concurrently)) and completion of Tier I writing requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media.
Develop, formalize, and communicate information designs. Gathering and structuring information and requirements to meet technological, personal, and business communication goals. Systematic usability evaluation of information designs.
- 452 Media Strategy (W)**
Spring. 4(4-0) P: (TC 200 or TC 300) and Completion of Tier I Writing Requirement
Strategic options, with their attendant risks and opportunities, available to media firms in an industry that is being transformed by new information and communication technologies.
- 455 3D Game and Simulation Design (W)**
Fall. 4(2-4) P: (TC 445) and completion of Tier I writing requirement RB: TC 247 R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization.
Advanced design, architecture, and creation concepts related to the development of real-time interaction 3D design for gaming, simulation, and immersive virtual environments.
- 458 Project Management (W)**
Spring. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media.
Managing complicated and multidisciplinary projects. Managing projects into manageable elements: scope, time, cost, quality, human resources, communication, risk, procurement, and integration. Communicate with stakeholders. Analyze organizations. Develop a budget. Identify roles and responsibilities during the critical planning, deployment, and evaluation stages.
- 462A Wireless Networks and Applications (W)**
Fall of even years. 4(2-4) P: (TC 361) and completion of Tier I writing requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Information Technology Specialization.
Technologies and services in the wireless telecommunications industry. Applications of wireless communications for voice and data communications, including cellular telephony and mobile data applications.
- 462B Social Computing (W)**
Spring of even years. 3(2-2) P: (TC 331 or TC 361) and completion of Tier I writing requirement RB: TC 375 R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Information Technology Specialization.
Social and technological perspectives on how people collaborate using information and communication technology. Experience with using multiple collaboration platforms and analysis of differences between enabling technologies.
- 462C Electronic Commerce (W)**
Spring of odd years. 3(2-2) P: (TC 361) and completion of Tier I writing requirement RB: TC 349 R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Information Technology Specialization.
Technologies, business models, and organizational and social implications of electronic commerce. Design of e-commerce sites.
- 464 Network Security**
Spring of odd years. 3(3-0) P: TC 361
Network security issues and how network security is maintained in voice data and video networks.
- 465 Advanced Network Management (W)**
Spring. 3(2-2) P: (TC 365) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media.
Techniques for analyzing organizational requirements for private voice data and video systems. Preparing a request for proposals and bids.
- 476 Advanced Media Research (W)**
Spring. 4(4-0) P: Completion of Tier I Writing Requirement RB: TC 376 R: Not open to freshmen or sophomores.
Media and communication technology research methods including content analysis, sampling, experiments, surveys, statistics, ratings, polling and qualitative research.

- 477 Global Media (W)**
Fall. 4(4-0) P: Completion of Tier I writing requirement. RB: (TC 100) R: Not open to freshmen or sophomores.
Comparison of national approaches to use of television, radio, cable, telephone, data and satellite communication, and the Internet. Development, international commerce, data flows, propaganda, impact on cultures.
- 490 Independent Study**
Fall, Spring, Summer. 1 to 7 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Open only to juniors or seniors in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.
Directed study under faculty supervision.
- 491 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits TC191, TC291, TC391 and TC491.
Contemporary issues in media and communication technology.
- 493 Telecommunication Internship**
Fall, Spring, Summer. 1 to 7 credits. A student may earn a maximum of 7 credits in all enrollments for this course. P: (TC 100 and TC 200 and TC 201 and TC 240) and (TC 310 or TC 361) R: Open only to juniors or seniors in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.
Supervised professional experience in a telecommunication institution, business or facility.
- 498 Collaborative Game Design (W)**
Spring. 4(2-4) P: ((TC 339 or concurrently) and TC 445 and TC 455) and completion of Tier I writing requirement R: Open to students in the Game Design and Development Specialization.
Design and development of comprehensive digital games in a team setting working with a client. Participation in a design cycle including specification, design, prototyping, implementation, testing, and documentation. Issues of professionalism, ethics, and communication.
- 802 Research Methods in Telecommunication**
Spring. 3(3-0) SA: TC 876
Social science research methods in telecommunication and Internet services assessing content, consumption and social effects. Design, sampling, data collection, analyses, presentation and ethics for content analysis, ethnographies, focus groups, case studies, surveys and experiments. Market research and segmentation including new product introductions.
- 820 Introduction to Theory in Telecommunication, Information, Society**
Fall. 3(3-0) SA: TC 821
Classic and contemporary theories of communication with special emphasis on applications to telecommunication, new media, and technology.
- 830 Foundations of Serious Games**
Fall. 3(3-0) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media. Approval of department.
Rationales, principles, processes, and pedagogies for serious game design. Applications of serious game genres and simulations. Funding and distribution.
- 831 Serious Game Theories**
Fall. 3(3-0) Interdepartmental with Advertising. Administered by Telecommunication. R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Theories and research on effects of serious games on cognition, affect, engagement, learning, and persuasion. Creating effective serious games.
- 832 Serious Game Design and Development**
Spring. 3(2-2) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media. Approval of department.
Design and development. Design documentation, storyboarding, prototyping, playtesting, implementation, and summative research. Management of interdisciplinary project teams.
- 840 Foundations of Digital Media Arts and Technology**
Fall. 3(2-2) RB: Basic familiarity with computers and Internet. R: Approval of department.
Foundational technology and design concepts and skills unique to and common across video, audio, multimedia, and 3-D animation/virtual reality.
- 841 Design Research for Digital Media Arts and Technology**
Spring. 3(3-0) Interdepartmental with Communication. Administered by Telecommunication. RB: Direct experience with the creative process for one or more digital media arts and technologies areas including audio, video, multimedia, and 3-D animation/virtual reality. SA: TC 824
Research methods used by design teams for asking and answering questions related to digital media arts and technology, before, during, and after design of creative work. The design goals and the design prototype are tested to guide development and evaluate effectiveness.
- 842 Design and Development of Media Projects**
Fall. 3(2-2) P: TC 840 and (TC 442 or TC 443 or TC 446 or TC 847) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Design of digital media arts projects in video, audio, multimedia, 3-D animation/virtual reality and other new media. Proposal development, team building, project management and workflow methods, production techniques and evaluative methods in the creation of media projects.
- 843 Digital Media Project**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to master's students in the Department of Telecommunication, Information Studies and Media.
Digital media arts and technology individual student project.
- 848 Special Topics in Digital Media Arts and Technology**
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: ((TC 840 or concurrently) and TC 841) and ((TC 442 or concurrently) or (TC 443 or concurrently) or (TC 446 or concurrently) or (TC 447 or concurrently)) R: Approval of department.
Current topics at the cutting edge of digital media arts and technology.
- 850 Telecommunication and Information Policy**
Spring. 3(3-0) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department. SA: TC 810
Analysis of major public and private telecommunication and information policies. Applying concepts and data from law, political science, economics, communication, technology and general social science.
- 852 Economic Structure of Telecommunication Industries**
Fall. 3(3-0) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Economic aspects of telecommunication and information industries. Emphasis on market structure, conduct, performance. Content diversity, new technologies, recent regulatory policies, and antitrust.
- 853 Information Technology and Organizations**
Spring. 3(3-0) RB: Knowledge of communication industries and technologies that might be acquired either academically or through professional experience.
Develops basic perspectives for analyzing the impact of information technologies on organizational structures, the allocation and performance of tasks within organizations, organization members, and organizational strategies and effectiveness, and relationships among firms in a market economy.
- 854 Economics of Media Markets and Strategies**
Spring of odd years. 3(3-0) P: TC 852 RB: Intermediate microeconomics class.
Conceptual tools and analytical perspectives on economic forces and incentives underlying structure, conduct, and responses to new technologies in media markets.
- 861 Information Networks and Technologies**
Fall. 3(3-0) RB: Academic or professional background in telecommunication field.
Fundamental characteristics, components, standards and applications of information networks and services. Local and wide area network technologies, fundamentals of the Internet, and private network technologies and services from a management perspective.
- 862 Information Networks and Electronic Commerce**
Spring. 3(2-2) P: TC 840 or TC 861 RB: Academic or professional background in telecommunication field.
Design and management of electronic commerce strategies and the telecommunications infrastructure. Impact of electronic commerce on organizations and society.

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- 863 Electronic Information and Entertainment Media Management**
Spring of even years. 3(3-0) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media. SA: TC 856
Management, programming, advertising, and promotion issues in broadcast television, multichannel television, interactive television, and Internet and broadband data service programming.
- 872 Telecommunication and National Development**
Fall of odd years. 3(3-0)
Role of electronic mass media and telecommunication in facilitating national development in Asia, Africa, Latin America, the Caribbean and the Middle East. Examples from agriculture, health, family planning, nutrition, and education.
- 877 Comparative and International Telecommunication**
Fall of even years. 3(3-0)
Comparison of various national approaches to broadcasting, cable, satellite and telephone systems. Policy, economic, institutional and content issues. Interactions and media flows among countries. International regulatory bodies.
- 890 Independent Study**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.
Individualized study under faculty supervision.
- 891 Special Topics in Telecommunication**
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to graduate students in the College of Communication Arts and Sciences or approval of department.
Contemporary issues. Topics vary.
- 893 Telecommunication Internship (N)**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
Internships in information industries.
- 899 Master's Thesis Research**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media.
Master's thesis research.
- 900 Theory Building in Media and Information Studies**
Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising.
Concepts and issues relating explanation, scientific inquiry, theory building and applications to interdisciplinary studies in media and information.
- 912 Information Technology Transactional Perspectives**
Spring of even years. 3(3-0) Interdepartmental with Information Technology Management. Administered by Information Technology Management. RB: Graduate level microeconomics course R: Open to doctoral students.
Multiple perspectives on relationships between organizations and information technology. Information processing, communications and management strategy approaches. Economic perspectives.
- 916 Qualitative Research Methods**
Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Journalism. R: Open only to doctoral students in the College of Communication Arts and Sciences or Department of Communication.
Qualitative research in mass and specialized communication systems. Topics include documentary, bibliographic, case study and participant observation methods.
- 921 Media Theory**
Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising. R: Open only to doctoral students in College of Communication Arts and Sciences or the Department of Communication.
Process and effects of mediated communication. Audiences, socialization, and persuasion. Macrosocietal, and intercultural perspectives. Theory construction.
- 930 Law and Public Policy of the Media**
Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Journalism. R: Open only to doctoral students in the Media and Information Studies major.
Philosophical, legal, political, and statutory principles underlying law and public policy applied to media. Selected issues involving constitutional law, common law, statutes, and administrative policy.
- 960 Media and Technology**
Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Telecommunication. R: Open only to doctoral students in the Communication Arts and Sciences-Media and Information Studies major or Communication major or approval of department.
Theoretical frameworks concerning media and communication processes, and their interactions with technology. Social, organizational, critical, and economic perspectives.
- 965 Media Economics**
Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Telecommunication. R: Open only to doctoral students in the Communication Arts and Sciences-Media and Information Studies major or Communication major or approval of department.
Economic theory and analysis relevant to the mass media. Economic structure and performance of mass media and advertising industries. Competition among media and within related industries.
- 975 Quantitative Research Design**
Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising. RB: One graduate-level research design or statistics course. R: Open only to doctoral students in the Media and Information Studies major.
Survey, experimental and content-analytic techniques applied to the study of media. Academic and applied research methods. Univariate and multivariate techniques.