At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Academic Programs

The University of Texas at Dallas offers over 100 academic programs across its seven schools. On this page you will find the academic programs offered by the university in its 2006-2008 Undergraduate Catalog and Graduate Catalog.

The semester of a student's official entry into a major determines which catalog requirements apply. Catalogs of previous years are available. Students are strongly encouraged to meet regularly with an academic advisor to establish and review their degree plan.

School Home Pages

The links below will take you to the home page for the school listed.

School of Arts and Humanities
School of Behavioral and Brain Sciences
School of Economic, Political and Policy Sciences
Erik Jonsson School of Engineering and Computer Science
School of General Studies
School of Management
School of Natural Sciences and Mathematics

Academic Programs by School

School of Arts and Humanities			
Arts and Humanities	BA		
Arts and Humanities - Arts and Performance	BA		
Arts and Humanities - Historical Studies	BA		
Arts and Humanities - Literary Studies	BA		
Arts and Technology	BA	MA, MFA	
History		MA	
Humanities		MA, MAT	PHD
Humanities - Aesthetic Studies		MA, MAT	PHD
Humanities - History of Ideas		MA, MAT	PHD
Humanities -Studies in Literature		MA, MAT	PHD
School of Behavioral and Brain Sciences			
Applied Cognition and Neuroscience		MS	
Audiology			AUD
Child Learning and Development	BS		
Cognition and Neuroscience			PHD
Cognitive Science	BS		
Communication Disorders		MS	
Communication Sciences and Disorders			PHD
Human Development & Early Childhood Disorders		MS	
Neuroscience	BS		
Psychological Sciences		MS*	PHD
Psychology	BA		
Speech-Language Pathology and Audiology	BS		

School of Economic, Political and Policy Sciences			
Applied Sociology		MS	
Criminology	BA	MS	PHD
Economics	BA, BS	MS	PHD
Geography	BA		
Geospatial Information Sciences		MS	PHD
International Political Economy	BA, BS	MS	
Master of Public Affairs		MPA	
Public Affairs	BS		
Public Affairs		MPA	PHD
Public Policy		MPP	
Public Policy and Political Economy			PHD
Political Science	BA		PHD
Sociology	BA		
Erik Jonsson School of Engineering and Computer Science			
Computer Engineering	BS	MS	PHD
Computer Science	BS	MS	PHD
Computer Science - Software Engineering		MS	
Electrical Engineering	BS	MS	PHD
Electrical Engineering - Microelectronics		MS	PHD
Electrical Engineering - Telecommunications		MS	
Materials Science and Engineering		MS	PHD
Software Engineering	BS		PHD
Telecommunications Engineering	BS	MS	PHD
School of General Studies			
American Studies	BA		
Gender Studies	BA		
Interdisciplinary Studies	BA, BS	MA	
Teacher Certification			
School of Management			
Accounting and Information Management	BS	MS	
Business Administration	BS		
Finance	BS		
Healthcare Management		MS	
Information Technology Management		MS	
International Management Studies		MA	PHD
Management and Administrative Sciences		MS	
Management Sciences			PHD
Master of Business Administration		MBA	
MBA - Cohort			
MBA - Executive			
MBA - Global Leadership Executive MBA			
MBA - Global Online			
MBA - Project Management			
School of Natural Sciences and Mathematics			
Applied Physics		MS	
Biochemistry	BS		
Bioinformatics and Computational Biology		MS	
Biology	BA, BS		
Biology - Molecular and Cell Biology		MS	PHD
Biotechnology		MS	
Chemistry	BA, BS	MS	PHD
Geosciences	BA, BS	MS	PHD
Mathematical Sciences	BS	MS	
Mathematical Sciences - Applied Mathematics	BS	MS	PHD
Mathematical Sciences - Engineering Mathematics		MS	
Mathematical Sciences -Statistics	BS	MS	PHD
Mathematics Education		MAT	
Molecular Biology	BS		
Physics	BA, BS	MS	PHD
Science Education		MAT	

Program Missions and Objectives by School

The links below describe the knowledge, skills, and attitudes that students are expected to learn as a result of their successful completion of the academic program's curriculum.

School of Arts and Humanities
School of Behavioral and Brain Sciences
School of Economic, Political and Policy Sciences
Erik Jonsson School of Engineering and Computer Science
School of General Studies
School of Management
School of Natural Sciences and Mathematics

* Available starting Fall 2008

The University of Texas at Dallas is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate through doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call (404) 679-4501 for questions about the accreditation of The University of Texas at Dallas.

Updated: August 20, 2007

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Program Missions & Objectives

B.A. in Art and Performance

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary degree in Arts and Performance that provides students the opportunity not only to master a specific area of artistic creation but also to connect that area with other forms of artistic expression and to develop skills of interpretation as well as creativity.

2. Objectives:

2.1 Describe and apply methodology processes: Students will be able to describe and apply basic methodologies processes by which aesthetic judgments are made

2.2 Demonstrate effective communication skills: Students will demonstrate effective oral and written communication skills

2.3 Demonstrate knowledge of principals and history: Students will demonstrate a broad knowledge of the principles and history of at least one major form of artistic expression

2.4 To gain experience and expertise : Students will gain experience and expertise in at least one area of the creative and performing arts

2.5 Apply knowledge to interpretation : Students will be able (a) to relate the process of creative practice that underlies different forms of artistic expression and (b) apply their understanding of creating works to the interpretation of artistic and humanistic works.

B.A. in Arts and Humanities

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering students the opportunity to design an interdisciplinary degree combining literature, history, philosophy, and the creative and performing arts.

2. Objectives:

2.1 Describe and apply interpretation methodologies: Students will be able to describe and apply basic methodologies of interpreting literary, historical, and artistic texts

2.2 Demonstrate effective communication skills: Students will demonstrate effective written and oral communication skills

2.3 Demonstrate broad knowledge of a specific issue: Students will demonstrate a broad knowledge of a major period, genre, or issue in literature, history, and the arts

2.4 Apply insights from multiple disciplines: Students will be able to apply insights from multiple disciplines to the interpretation of texts and solution of problems

B.A. in Arts and Technology

1. Mission Statement: The mission of our undergraduate Arts and Technology program is to provide students a broad grounding in digital content design and development by exposing them to the theory and practice of computer programming, information design, computer graphics/animation, digital sound design and interactive game design. The goal of the program is to prepare students to understand and succeed in the media-rich, technologically sophisticated world of the 21st century.

2. Objectives:

2.1 Knowledge Base: Students will describe and analyze fundamental concepts, theoretical perspectives, and historical and latest trends in digital content design and development.

2.2 Identify effective digital methods: Students will identify effective digital methods for visualizing artistic concepts.

2.3 Technology Based Creativity: Students will create original digital works that demonstrate their artistic and technical skills and reflect a high degree of individual expression.

2.4 Critical Thinking and Communication Skills: Students will explain aesthetic and technical merits of their works and others'.

2.5 Apply skills to construct creative projects: Students will construct creative projects by applying the knowledge and skills that they have gained in the program.

B.A. in Historical Studies

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary degree in Historical Studies that provides students the opportunity not only to develop skills in historical inquiry but also to employ insights from literature and/or the creative arts in their investigation. Graduates are eligible to earn high school teaching certification in history and/or social studies.

2. Objectives:

2.1 Interpretive Skills: Graduates will be able to describe and apply basic methodologies of historical investigation and the processes by which historical judgments are made

2.2 Communicative Ability: Students will demonstrate effective written and oral communication skills

2.3 Knowledge Base: Students will demonstrate a broad knowledge of major periods of history and a thorough knowledge of one particular era, place or topic of historical investigation

2.4 Interdisciplinary Perspective: Students will be able to apply insights from other disciplines to the interpretation of historical texts and events

B.A. in Literary Studies

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary degree in Literary Studies that provides students the opportunity not only to demonstrate critical sophistication and acuity in responding to literary texts but also to connect literature with other forms of arts

2. Objectives:

2.1 Describe and apply basic methodologies: Students will be able to describe and apply basic methodologies of interpreting literary texts

2.2 Demonstrate effective communication skills: Students will demonstrate effective written and oral communication skills

2.3 Demonstrate broad knowledge of major genres: Students will demonstrate a broad knowledge of major periods and genres of literature

2.4 Apply insights from other disciplines: Students will be able to apply insights from other disciplines and/or forms of artistic expression to the interpretation of literary texts

Graduate Certificate in Holocaust Studies

1. Mission Statement: The mission of the Holocaust Studies Program at The University of Texas at Dallas is to teach about and enhance the national and international consciousness of the Holocaust. It is designed to advance knowledge and to educate students as well as the larger community about this historical catastrophe that turned into ashes the European Jews, and still overshadows the achievements of European Humanism and the Enlightenment. The certificate in Holocaust Studies is available to both non-degree and degree-seeking students. Professionals, students, teachers, and others employed in positions of education and related private organizations pursue the certificate to obtain additional education. Graduates of this fifteen-credit hours certificate will have a thorough understanding of the history of anti-Semitism, the Holocaust, and the major contemporary philosophical, aesthetic, and analytical responses to this calamity.

2. Objectives:

2.1 Students will demonstrate a solid of comprehension of the development of anti-Semitism and the history of the Holocaust.: Students will demonstrate a solid of comprehension of the development of anti-Semitism and the history of the Holocaust.

2.2 Students will learn the background and events of the Holocaust, and the subsequent aesthetic, philosophical, and literary responses to this event: Students will learn the background and events of the Holocaust, and the subsequent aesthetic, philosophical, and literary responses to this event

2.3 Students will learn of political and developments and of the major writers, and artists of 19th, and 20th century Germany.: Students will learn of political and developments, and of the major writers, and artists of 19th, and 20th century Germany.

2.4 Students will demonstrate thorough

mastery of 19th, and 20th Jewish culture, history, aesthetics, and literature: Students will demonstrate thorough mastery of 19th, and 20th Jewish culture, history, aesthetics, and literature

M.A. in Arts and Technology

1. Mission Statement: The mission of our Masters of Art in Arts and Technology (ATEC) program is to provide students a broad grounding in digital content design and development by exposing them to the theory and practice of computer programming, information design, computer graphics/animation, digiotal sound design and interactive game design. The goal of the program is to prepare students to understand and succeed in the media-rich, technologically sophisticated world of the 21st century. The ATEC MA program offers advanced training and the opportunity to create and/or discover new practical applications for technologically based creativity

2. Objectives:

2.1 Knowledge base: Students will describe and analyze advanced concepts, theoretical perspectives, and historical and latest trends in digital content design and development.

2.2 Effective digital methods: Students will identify and evaluate effective digital methods for visualizing artistic and technical concepts

2.3 Technology based creativity: Students will create original digital works that demonstrate their artistic and technical skills and reflect a high degree of individual expression

2.4 Critical thinking and communication skills: Students will analyze aesthetic and technical merits of their works and others'

2.5 Application: Students will construct research projects to advance our knowledge and technology in the field and to meet the challenges of a rapidly changing global society.

M.A. in History

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an M.A. that prepares students for doctoral studies in History or Humanities, to conduct research in History, and to teach History at the secondary or community college level. To support the university's commitment to producing engaged graduates who are prepared for life, work ,and leadership (especially in the liberal arts) in a constantly changing world.

2. Objectives:

2.1 Historical Method: Students will be able to describe, apply, and analyze major concepts and goals of research appropriate to the discipline of history (Hist 5311)

2.2 Focused Expertise : Students will be able to demonstrate advanced knowledge of a focused area in history by evaluating trends in US History. (Hist 6325)

2.3 Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation (HUHI 7368)

2.4 Professional Advancement: Research track graduates will be adequately prepared for doctoral programs in history or humanities by writing and defending an MA thesis (HIST 8398--Thesis hours)

M.A. in Humanities

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary M.A. in the Humanities that enables students not only to gain advanced expertise in a specific academic field (studies in literature, history of ideas, aesthetic studies) but also to place the specific focus of their studies in a larger humanistic context. To support the university's mission of advancing excellent educational an research programs in the liberal, creative, and practical arts.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe, apply, and analyze the major concepts and goals of research that cross the boundaries of traditional academic disciplines.

2.2 Focused Expertise: Students will be able to demonstrate advanced knowledge of a focused area in the Humanities

2.3 Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation

2.4 Professional Advancement: Research track graduates will be adequately prepared for doctoral programs in the humanities by completing a portfolio that included independent research of a lengthy nature sufficient for academic argument and requiring demonstrable ability to use a foreign language in an academic context.

M.A. in Humanities - Aesthetic Studies

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary master's program that prepares students to produce publishable research and/or creative work that transcends traditional academic disciplinary boundaries; to prepare students not only to gain advanced expertise in a specific area (studies in literature, history of ideas, aesthetic studies) but also to conduct research that creates connections across disciplines; to prepare students for teaching careers at the college/university level. To support the university's mission of advancing excellent educational and research programs in the liberal, creative, and practical arts.

2. Objectives:

2.1 Inter-disciplinary Perspective: Students will be able to describe and analyze the major concepts and goals of research that cross the boundaries of traditional academic disciplines

2.2 Focused Expertise : Students will be able to demonstrate advanced knowledge of a focused area in Aesthetic Studies through performance, writing, and oral presentations as required by courses (HUAS 6315, HUAS 6373).

2.3 Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretations.

2.4 Performance Capability: Students with focus on creative performance will be able to produce works of art in one or more medium/genre and to place their work in a larger critical and cultural context.

M.A. in Humanities - History of Ideas

1. Mission Statement: To support the Mission of the

School of Arts and Humanities by offering an interdisciplinary M.A. in the Humanities that enables students not only to gain advanced expertise in a specific academic field (literary studies, history of ideas, aesthetic studies) but also to place the specific focus of their studies in a larger humanistic context. To support the university's mission of advancing excellent educational and research programs in the liberal, creative, and practical arts.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe, apply, and analyze the major concepts and goals of research that crosses the boundaries of traditional academic disciplines.

2.2 . Focused Expertise: Students will be able to demonstrate advanced knowledge of a focused area in the History of Ideas.

2.3 Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation.

2.4 . Professional Advancement: Research track graduates will be adequately prepared for doctoral programs in literature, history, and/or the humanities as evidenced by acceptance rates to advanced programs.

M.A. in Humanities - Studies in Literature

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary M.A. in the Humanities that enables students not only to gain advanced expertise in a specific academic field (literary studies, history of ideas, aesthetic studies) but also to place the specific focus of their studies in a larger humanistic context. To support the university's commitment to advancing educational and research programs in the liberal arts.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe, apply, and analyze the major concepts and goals of research that crosses the boundaries of traditional academic disciplines.

2.2 Focused Expertise: Students will be able to demonstrate advanced knowledge of a focused area in literature by describing and analyzing specific literary texts.

2.3 Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretations.

2.4 Professional Advancement: Research track graduates will be adequately prepared for doctoral programs in the humanities by completing a portfolio that included independent research of a lengthy nature sufficient for academic argument and requiring demonstrable ability to use a foreign language in an academic context.

M.A.T. in Humanities - Aesthetic Studies

1. Mission Statement: The mission of the M.A.T. in Aesthetic Studies degree program is to provide graduate education for practicing high school teachers that places Aesthetic Studies in a broader interdisciplinary context. The Aesthetic Studies M.A.T. program provides graduates who have achieved a Masters level command of best practices in teaching a range of topics in at least one area of "Aesthetic Studies" (e.g. visual arts, drama, music) in high school. This program also supports the university's mission to

transform ideas (about the arts and humanities) into actions that directly benefit the personal, economic, social, and cultural lives of the citizens (K-12) of Texas.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe and analyze major concepts and goals of instruction that cross the boundaries of traditional academic disciplines

2.2 Focused Expertise : Students will be able to demonstrate advanced knowledge of a focused area in the creative and/or performing arts through analysis and evaluation of specific works of art or specific genres of art.

2.3 Professional Application: Students will be able to apply interdisciplinary approaches to the development of new courses or programs of instruction at the K-12 level

2.4 Other Outcomes: Students will acquire a commitment to interdisciplinary education.

M.A.T. in Humanities - History of Ideas

1. Mission Statement: The mission of the M.A.T. in History of Ideas degree program is to provide graduate education in History and Philosophy for practicing high school teachers. The History of Ideas M.A.T. program provides graduates who have achieved a Masters level command of best practices in teaching a wide variety of topics in history and/or philosophy in high school. This program also supports the university's mission to transform ideas (history) into actions (curriculum and pedagogy) that directly benefit the personal, economic, social, and cultural lives of the citizens (K-12) of Texas.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe and analyze major concepts and goals of instruction that cross the boundaries of traditional academic disciplines

2.2 Focused Expertise : Students will be able to demonstrate advanced knowledge of a focused area in history or philosophy through the analysis and evaluation of specific texts.

2.3 Professional Application: Students will be able to apply interdisciplinary approaches to the development of new courses or programs of instruction at the K-12 level

2.4 Other Outcomes: Students will acquire a commitment to interdisciplinary education.

M.A.T. in Humanities - Studies in Literature

1. Mission Statement: The mission of the M.A.T. in Studies in Literature degree program is to provide graduate education in Literature for practicing high school teachers. The Studies in Literature M.A.T. program provides graduates who have achieved a Masters level command of best practices in teaching a wide variety of topics associated with the study of literature in high school. This program also supports the university's mission to transform ideas (about literature) into actions (curriculum and pedagogy) that directly benefit the personal, economic, social, and cultural lives of the citizens (K-12) of Texas.

2. Objectives:

2.1 Interdisciplinary Perspective: Students will be able to describe and analyze major concepts and goals of instruction that cross the boundaries of traditional academic disciplines

2.2 Advanced Knowledge: Students will be able

to demonstrate advanced knowledge of a focused area in literature through the analysis and evaluation of specific texts and/or genres of literature.

2.3 Apply Interdisciplinary Approaches: Students will be able to apply interdisciplinary approaches to the development of new courses or programs of instruction at the K-12 level

2.4 Interdisciplinary Education: Students will acquire a commitment to interdisciplinary education.

M.F.A. in Arts and Technology

1. Mission Statement: The mission of our Masters of Fine Art in Arts and Technology (ATEC) program is to provide students a broad grounding in digital content design and development by exposing them to the theory and practice of computer programming, information design, computer graphics/animation, digital sound design and interactive game design. The goal of the program is to prepare students to understand and succeed in the media-rich, technologically sophisticated world of the 21st century. The ATEC MFA program is designed to produce a new generation of artists and college level educators in an emerging field likely to have an impact on 21st-century culture and education analogous to that of film and Film Studies in the 20th century.

2. Objectives:

2.1 Knowledge base: Students will describe and analyze advanced concepts, theoretical perspectives, and historical and latest trends in digital content design and development.

2.2 Effective digital methods: Students will identify and evaluate effective digital methods for visualizing artistic and technical concepts.

2.3 Technology based creativitiy: Students will create original digital works that demonstrate their artistic and technical skills and reflect a high degree of individual expression

2.4 Critical Thinking and Communication Skills: Students will analyze aesthetic and technical merits of their works and others'.

2.5 Research Application: Students will construct research projects to advance our knowledge and technology in the field and to meet the challenges of a rapidly changing global society.

Ph.D. in Humanities

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary doctoral program that prepares students to produce publishable research and/or creative work that transcends traditional academic disciplinary boundaries; to prepare students not only to gain advanced expertise in specific areas (studies in literature, history of ideas, aesthetic studies) but also to conduct research that creates connections across disciplines; to prepare students for teaching careers at the college/university level.

2. Objectives:

2.1 To support the Mission of the School of A&H: Students will be able to describe, apply, and analyze major concepts and goals of research that cross the boundaries of traditional academic disciplines

2.2 Advanced Knowledge: Students will be able to participate in constructing and demonstrating

advanced knowledge of a focused, integrated area in the Humanities

2.3 Research Capability: Research Capability: Students will be able to produce research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation.

2.4 Advanced Research Dissemination: Some students will be able to conduct and create publishable interdisciplinary research.

2.5 Professional Advancement: Some graduates will successfully obtain faculty appointments in higher education (universities, colleges, community colleges) or appointments in related fields requiring a doctoral degree.

Ph.D. in Humanities - Aesthetic Studies

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary doctoral program that prepares students to produce publishable research and/or creative work that transcends traditional academic disciplinary boundaries; to prepare students not only to gain advanced expertise in a specific areas (studies in literature, history of ideas, aesthetic studies) but also to conduct research that creates connections across disciplines; to prepare students for teaching careers at the college/university level. To support the university's mission of advancing excellent educational and research programs in the liberal, creative, and practical arts.

2. Objectives:

2.1 Inter-disciplinary Perspective: Students will be able to describe and analyze the major concepts and goals of research that cross the boundaries of traditional academic disciplines

2.2 Focused Expertise : Students will be able to design and demonstrate advanced knowledge of a focused area in Aesthetic Studies.

2.3 Research Capability: Students will be able to produce cogently written interdisciplinary research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation

2.4 Performance Capability: Students with focus on creative performance will be able to produce works of art in one or more medium/genre and to place their work in a larger critical and cultural context

2.5 Advanced Research/Creative Dissemination: Some students will be able to conduct publishable interdisciplinary research and/or works of artistic expression.

2.6 Professional Advancement: Some graduates will successfully obtain faculty appointments in higher education (universities, colleges, community colleges) or other appointments in related fields requiring a doctoral degree

Ph.D. in Humanities - History of Ideas

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary doctoral program that prepares students to produce publishable research and/or creative work that transcends traditional academic disciplinary boundaries; to prepare students not only to gain advanced expertise in a specific areas (literary studies, history of ideas, aesthetic studies) but also to conduct research that creates connections across disciplines; to prepare students for teaching careers at the college/

university level. To support the university's mission of advancing excellent educational and research programs in the liberal, creative, and practical arts.

2. Objectives:

2.1 1. Inter-disciplinary Perspective: Graduates will be able to describe, apply and analyze major concepts and goals of research that crosses the boundaries of traditional academic disciplines.

2.2 . Focused Expertise : Graduates will be able to demonstrate advanced knowledge of a focused area in the History of Ideas.

2.3 Research Capability: Students will be able to produce cogently written interdisciplinary research that reflects the ability to aggregate relevant evidence and use evidence to support their interpretation.

2.4 Advanced Research Dissemination: Some graduates will be able to conduct publishable interdisciplinary research

2.5 5Professional Advancement: Some graduates will successfully obtain faculty appointments in higher education (universities, colleges, community colleges) or other appointments in related fields requiring a doctoral degree.

Ph.D. in Humanities - Studies in Literature

1. Mission Statement: To support the Mission of the School of Arts and Humanities by offering an interdisciplinary doctoral program that prepares students to produce publishable research and/or creative work that transcends traditional academic disciplinary boundaries; to prepare students not only to gain advanced expertise in a specific areas (literary studies, history of ideas, aesthetic studies) but also to conduct research that creates connections across disciplines; to prepare students for teaching careers at the college/ university level.

2. Objectives:

2.1 Inter-disciplinary Perspective:: Students will be able to describe and analyze the major concepts and goals of research that crosses the boundaries of traditional academic disciplines

2.2 Focused Expertise : Graduates will be able to design and demonstrate advanced knowledge of a focused area (theme, genre, historical period) of Literary Studies

2.3 Research CapabilitY: Students will be able to produce cogently written interdisciplinary research, focused on a literary topic, that reflects the use of evidence to support interpretation.

2.4 Advanced Research Dissemination: Some graduates will be able to conduct publishable interdisciplinary research and/or works of artistic expression.

2.5 Professional Advancement: Some graduates will successfully obtain faculty appointments in higher education (universities, colleges, community colleges) or other appointments in related fields requiring a doctoral degree.

Updated: August 20, 2007

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Program Missions & Objectives

AUD in Audiology

1. Mission Statement: The mission of the AuD Program is to guide students in attaining the essential knowledge and skill for entry to the practice of audiology; to provide the breadth and depth of classroom and practical experiences consonant with each student's developing interests and career goals; and to support student clinical preparation through innovative and collaborative clinical services, on campus and in the global community, and an active program of research in understanding, treating, and preventing disorders associated with auditory and vestibular impairments

2. Objectives:

2.1 Analysis of Audition: Students will analyze hearing and related sciences; recognize normal anatomy and physiology of the auditory and vestibular systems and related structures; classify the effects of auditory and vestibular disorders and changes throughout the life span.

2.2 Evaluation of Hearing Disorders: Students will demonstrate principles and methods of screening, evaluation and intervention for individuals with auditory and vestibular disorders, including consideration of anatomical/physiological, psychological, developmental, social, linguistic and cultural correlates of the disorders commensurate with an entry-level independent practitioner

2.3 Foundation in Ethical Practice:: Students will demonstrate knowledge of professional code of ethics, the laws, regulations, policies, supervisory processes and health-care management practices relevant to the profession of audiology.

2.4 Critiquing Auditory Research: Students will demonstrate the ability to synthesize and critique the research literature in audiology and demonstrate knowledge of evidenced-based practices.

2.5 Oral and Written Communication: Students will demonstrate oral and written communication skills commensurate with an entry-level, independent practitioner

2.6 Foundation in cultural correlates of

communication: Students will demonstrate foundation knowledge in the cultural correlates of communication with patients and families from diverse cultural/ linguistic backgrounds.

2.7 Self-Assessment in Audiology: Students will demonstrate self-evaluation skills, active and collaborative learning essential to maintaining excellence in the field of audiology

B.A. in Psychology

1. Mission Statement: The mission of our undergraduate Psychology program is to provide students a broad grounding in scientific psychology by exposing them to the major theoretical and research issues in the field and by developing skills in critical thinking, statistical analysis, research design and scientific writing. The goal of the program is to prepare students for either advanced professional training in psychology and related fields or employment in human services, research, or business contexts.

2. Objectives:

2.1 Describe theories, findings and history of psych: Describe and analyze the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

2.2 Explain basic psychology research methods : Explain and apply basic psychology research methods, including research design, data analysis, and interpretation.

2.3 Apply critical thinking to solve problems: Respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to analyze and solve problems.

2.4 Demonstrate effective communication : Demonstrate effective communication in specific contexts and formats.

2.5 Apply psychological principles to practical issues: Apply psychological principles and findings to personal, professional and social policy issues.

B.S. in Child Learning and Development

1. Mission Statement: The mission of the undergraduate Child Learning and Development program is to provide students a broad grounding in scientific study of the fundamental processes of child and adolescent development within the contexts of families, schools, peer groups, and larger cultural milieu. The program provides students with strong foundations in 1) cognitive, language, and socio-emotional development, 2) research skills for conducting scientific studies and evaluating applied programs, 3) translating scientific findings into practical applications for understanding and improving children's lives. The program provide the intellectual core for students pursuing any number of career paths involving children, families, schools and other social institutions, including careers in elementary school teaching, educational research, college and university academics, pediatric and family medicine, family law, social work, human services, clinical and counseling psychology.

2. Objectives:

2.1 Descibe and analyse theories, issues, findings 2: Describe and analyze the major issues, theoretical perspectives, empirical findings, and historical trends in the scientific study of child and adolescent development.

2.2 Describe and apply research methods: Describe and apply basic behavioral science research methods, including research design, data analysis, and interpretation, that are used in the scientific study of child and adolescent development.

2.3 Use modes of critical thinking of the field: Use critical thinking, skeptical inquiry, and, when possible, the scientific approach to analyze and solve problems.

2.4 Demonstrate effective communication: Demonstrate effective communication in specific contexts and formats.

2.5 Apply theories, concepts, and findings : Apply theories, concepts and findings to personal, professional and social policy issues.

B.S. in Cognitive Science

1. Mission Statement: The mission of our undergraduate Cognitive Science program is to provide students a multi-disciplinary grounding in cognitive science by exposing them to the major theoretical and research issues in the fields of Psychology, Neuroscience, and Computational Modeling and by developing skills in critical thinking, experimental analysis, research design and scientific writing. The goal of our pre-professional program is to prepare students for either advanced graduate training in Cognitive Science and related fields such as Psychology or Neuroscience or Computer Science or for professional training in areas such as human-computer interactions, artificial intelligence, experimental psychology, and/or neuroscience.

2. Objectives:

2.1 Knowledge Base of Cognitive Science: Describe and analyze the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology, neuroscience, and computational modeling.

2.2 Research Methods in Cognitive Science: Explain and apply basic cognitive science research methods, including research design, data analysis, and interpretation. Scientific Problem Solving. Communication Skills.

2.3 Applied Cognitive Science Problems: Apply cognitive science principles and findings to applied problems.

B.S. in Neuroscience

1. Mission Statement: The mission of our undergraduate Neuroscience program is to provide students a multi-disciplinary grounding in the neurosciences by exposing them to the major theoretical and research issues in the field and by developing skills in critical thinking, experimental analysis, research design and scientific writing. The goal of our pre-professional program is to prepare students for either advanced graduate training in Neuroscience and related fields or for professional training in medicine, dentistry, or allied health areas. A Neuroscience degree can also prepare students for employment in a number of scientifically oriented businesses, or for work in a technical setting.

2. Objectives:

2.1 Analyze concepts, findings and theories: Explain and analyze the core concepts, empirical findings, and historical and current theories in the neurosciences

2.2 Use critical and creative thinking to solve probs: Respect and use critical and creative thinking, skeptical inquiry, and a scientific approach to analyze and solve problems

2.3 Demonstrate effective communication: Demonstrate effective communication in specific contexts and formats

2.4 Apply scientific principles to social issues: Understand and apply scientific principles and findings from neuroscience to behavioral and social issues

outside the laboratory context

B.S. in Speech-Language Pathology and Audiology

1. Mission Statement: The mission of the Program in Speech-Language Pathology and Audiology is to provide students with foundation knowledge in the speech, language, and hearing sciences, and in the disorders of communication. It is also the mission of the program to assist students to discover their clinical potential through introductory opportunities observing and participating in clinical practice. The program prepares students for entry to graduate professional programs in speech-language pathology or audiology, or for licensure as a speech-language pathology assistant.

2. Objectives:

2.1 Speech and Language Foundations: Students will demonstrate foundation knowledge in speech, language, and hearing sciences and disorders.

2.2 Assessment and Intervention: Students will demonstrate foundation knowledge and beginning level skills for culturally sensitive assessment and intervention of communication disorders.

2.3 Foundation in Clinical Practice: Students will demonstrate foundation knowledge and beginning level skills in clinical practice: develop appropriate intervention plans with measurable and achievable goals that meet client needs, implement intervention plans, select appropriate materials, measure and evaluate client's performance and progress, modify intervention plans as appropriate, complete administrative and reporting functions.

2.4 Foundation in Ethical Practice: Students will demonstrate foundation knowledge regarding the ASHA Code of Ethics and principles of ethical practice and apply that knowledge to clinical practice.

M.S. in Applied Cognition and Neuroscience

1. Mission Statement: The mission of the ACN program is to provide knowledge and develop expertise in both theoretical and applied areas in the fields of cognition and/or neuroscience for the purposes of facilitating the further development of both academic and non-academic careers associated with the cognition and/or neuroscience fields. In particular, students have the opportunity to obtain advanced training in psychology/neuroscience research related activities, computational modeling and artificial intelligence, human-computer interactions, and neurological diagnosis and monitoring for the purposes of further enhancing post-graduate career opportunities.

2. Objectives:

2.1 Knowledge Base of Cognition and Neuroscience: Obtain basic knowledge of neuroscience and/or cognitive psychology

2.2 Research Methods in Cognition and Neuroscience: Explain and apply basic cognition and neuroscience research methods, including research design, data analysis, and interpretation.

2.3 Applications to Applied Problems: Apply cognition and/or neuroscience principles and findings to applied problems.

M.S. in Communication Disorders

1. Mission Statement: The mission of the Program in Communication Disorders is to guide students in attaining the essential knowledge and skill for entry to the practice of speech-language pathology; to provide the breadth and

depth of classroom and practical experiences consonant with each student's developing interests and career goals; and to support student clinical preparation through innovative and collaborative clinical services, on campus and in the community, and an active program of research in understanding, treating, and preventing communication disorders.

2. Objectives:

2.1 Basic Processes: Students will apply knowledge in communication and swallowing processes and disorders, including their biological, neurological, acoustic, psychological, developmental/lifespan, linguistic and cultural bases and apply that knowledge to clinical practice at a level commensurate with entry-level certification and licensure in speech-language pathology

2.2 Prevention, Assessment & Intervention: Students will demonstrate knowledge and skills in the principles and methods of prevention, assessment and intervention for people with communication disorders including anatomical/physiological, psychological, developmental, and linguistic and cultural correlates of the disorders at a level commensurate with entry-level certification and licensure in speech-language pathology.

2.3 Academic and Clinical Experiences: Students will successfully engage in academic and clinical experiences that prepare them to evaluate and treat individuals who exhibit disorders of articulation, fluency, voice/resonance, receptive/expressive language, hearing, swallowing, cognitive aspects of communication, social aspects of communication, and communication modalities and demonstrate critical thinking skills at a level commensurate with entry-level certification and licensure in speech-language pathology

2.4 Research and Ethics : Students will demonstrate knowledge and application principles of ethical practice, research design and analysis at a level sufficient to critique relevant research, evaluate assessment and intervention approaches, and understand and apply principles of evidence-based practice.

M.S. in Human Development and Childhood Disorders

1. Mission Statement: The mission of the program in Human Development and Early Childhood Disorders is to provide knowledge and develop expertise in both theoretical and applied areas in the fields of early child development and developmental disorders for the purposes of facilitating the development of careers associated with early childhood intervention.

2. Objectives:

2.1 Critical Thinking about childhood development: Students will demonstrate the ability to think critically about normal and atypical early childhood development

2.2 Assessing and Preventing Developmental Disability: Students will demonstrate knowledge and skills in prevention, assessment, and intervention with young children with developmental disabilities and their families

2.3 Experience with Developmental Disabilities: Students will successfully engage in practicum and internship experiences or mentorship experiences which prepare them to evaluate and work with young children with special needs and their families.

2.4 Accommodating Pediatric Developmental Disabilities: Students will use critical thinking skills and apply principles of ethical practice and professional skills in their preparation and

implementation of plans for intervention with young children with special needs and their families.

2.5 :

2.6 Research design for Evidence-based Practice: Students will demonstrate knowledge of research design at a level sufficient to critique research on child development and the effectiveness of early intervention

Ph.D. in Cognition and Neuroscience

1. Mission Statement: To provide students a multi-disciplinary grounding in cognitive science and neuroscience, exposing them to the major theoretical and research issues in both fields and developing their skills in critical thinking, research design, experimental analysis and scientific writing in their chosen area of specialization. Our overarching goal is to produce well-rounded scientific scholars and researchers with sharply focused expertise in one or more areas of cognition and/or neuroscience.

2. Objectives:

2.1 Knowledge Base of Cognition and Neuroscience: Describe and analyze major concepts, theoretical perspectives, empirical findings, and historical trends in cognition and neuroscience.

2.2 Research Methods in Cognition and Neuroscience: Explain and apply basic methodological principles used in research in cognition and neuroscience, as well as those advanced and specialized procedures used in a student's chosen research area.

2.3 Critical Thinking in Cognition and Neuroscience: Demonstrate scholarship, critical and creative thinking and skeptical inquiry in formulating research questions and analyzing research literature in a student's chosen area

2.4 Communication Skills in Cognition and Neuroscie: Demonstrate effective communication in specific contexts and formats

2.5 Contributions to Knowledge in Cognition&Neurosc.: Demonstrate the ability to contribute to scientific conferences and the published research literature in a student's chosen research area

Ph.D. in Communication Sciences and Disorders

1. Mission Statement: The mission of the Program in Communication Sciences and Disorders is to prepare doctoral students for national and global leadership roles in research and teaching; to conduct exemplary research in speech, language, and hearing science; and through disciplinary and interdisciplinary research, teaching, and clinical activities bring about greater understanding of the causes of communication disorders and more effective treatment and prevention of communication impairments

2. Objectives:

2.1 Competence in Research and Core Knowledge : Students will conduct doctoral level independent and collaborative research and demonstrate specialized knowledge in one or more of the following areas: hearing science, speech science, language science, and disorders of communication commensurate with entry to a career in university-level teaching and research

2.2 Competence in Application of Core Literature : Students will demonstrate the ability to synthesize and critique the research literature in core and related disciplines; demonstrate knowledge of the principles of experimental design and statistical analysis; and show critical thinking and professional writing skills commensurate with the preparation of journal articles,

professional presentations, and grant proposals.

2.3 Technology Competence: Students will demonstrate competence in the use of technology appropriate to their area of study

2.4 Competence in use of Ethical Principles in Resear: Students will demonstrate the practice of ethical principles for research on human subjects

Ph.D. in Psychological Sciences

1. Mission Statement: The mission of the Psychological Sciences program is to prepare doctoral students for leadership roles in research, teaching, and applications of psychology, and to conduct exemplary research in developmental processes, cognition, or social/personality psychology. Through disciplinary and interdisciplinary research and teaching, we seek to create improved understanding of mechanisms influencing social and cognitive behavior and development.

2. Objectives:

2.1 Foundation in Psychological Sciences: Students will analyze and apply fundamental concepts and theories in psychological sciences

2.2 Critiquing Research: Students will compare/ contrast, interpret, and critically evaluate research findings and theories in their major area of study

2.3 Analysis and Experimental Design: Students will apply and evaluate appropriate analytic and experimental design methodologies

2.4 Designing and Implementing Research: Students will design, implement, and interpret research studies and communicate research findings

2.5 Teaching: Students will demonstrate the ability to teach in psychological sciences

Updated: August 20, 2007

At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Program Missions & Objectives

B.A. in Criminology

1. Mission Statement: The mission of the Criminology Program is to examine the causes and consequences of crime and crime control policies by providing a program of study involving a variety of perspectives, approaches, and social science disciplines to undergraduate students. Our faculty members are dedicated teachers and scholars who have published their work in the most prestigious journals in the field. They are committed to expanding the knowledge of the discipline and preparing students to be leaders in influencing our society's response to crime. Also our staff supports the faculty and students by creating a stimulating learning environment that fosters collaboration and scholarship for faculty and students. The staff is also committed to helping students with academic and career issues across a student's program of study, like for example, with arranging student internships

2. Objectives:

2.1 Students will describe the structure and functions of the various components of the criminal justice system.:

2.2 Students will analyze the causes and correlates of criminal behavior and evaluate the prevailing theoretical foundations of criminology as they relate to those causes and correlates of criminal behavior and evaluate the prevailing theoretical foundations of criminology as they relate to those causes and correlates:

2.3 Students will assess measurement techniques used in criminology and implement them to study crime and other social problems.:

2.4 Students will analyze the goals, procedures, and impact of law and the legal process.:

2.5 Students will apply critical thinking to meet the challenges of a rapidly changing global society:

B.A. in Economics

1. Mission Statement: The mission of the B.A. in Economics program is to provide an education that allows the student to understand social phenomena from an economics perspective of benefits and costs, emphasizing an intuitive level of understanding while developing some rudimentary mathematical rigor to aid the intuition. The student will be able and to think critically about choices in the face of limited resources in order to understand more clearly the choices available to society and the economic consequences of decisions.

2. Objectives:

2.1 Demonstrate knowledge of components of economy: Students will define and explain the various components of an economy and how economic decision making based on marginal benefit-marginal cost analysis can be used to explain decision making on the part of households, firms, and the public sector. as well as how these components of the economy affect the aggregate economy

2.2 Analyze economic behavior and evaluate its effects: Students will analyze economic behavior and provide examples of the effects of this behavior in terms of microeconomic and macroeconomic outcomes.

2.3 Assess measurement techniques used in economics: Students will identify and define types of basic measurement techniques used in economics and explain the best uses of them to study economic behavior and the effects of economic behavior

2.4 Analyze economic decisiong making : Students will identify and explain the goals, procedures, and impact of economic decision making in the various sectors of the economy

2.5 Apply critical thinking skills: Students will explain how they can personally contribute to meeting the challenges of a rapidly changing global society. (Based on UTD Strategic Plan)

B.A. in Geography

1. Mission Statement: The mission of the Bachelor of Arts in Geography program is to provide students a rigorous education in the fundamental theories, concepts, quantitative tools and analytical research methodologies central to the field of geography. The program fosters an understanding of the local and global ways in which humans evaluate spatially distributed phenomena, organize their activities in space, and use and manage the earth's resources and environments. So equipped, UT-Dallas geography graduates will effectively participate as global citizens, successfully compete for professional jobs requiring strong analytical geographic skills and an integrative spatial perspective, and be admitted to the best graduate schools globally.

2. Objectives:

2.1 Demonstrate knowledge of fundamental theories: Students will demonstrate their knowledge of the fundamental theories and concepts central to the field of geography.

2.2 Apply quantitative tools and research methods: Students will apply quantitative tools and analytical research methodologies to spatial issues central to the field of geography.

2.3 Evaluate spatially distributed phenomena: Students will analyze and evaluate the local and global ways in which humans evaluate spatially

distributed phenomena, organize their activities in space, and use and manage the earth's resources and environments.

B.A. in Political Science

1. Mission Statement: The mission of the Bachelor of Arts in Government and Politics is to provide students with the substantive and analytical skills necessary to study interesting and important questions about how citizens influence what government does, the responsibilities and effectiveness of government, and the consequences of what public institutions and officials do for individual and community well-being. Coursework in American government, international relations, law, political behavior, political economy, political institutions, political theory, and public policy provides the foundations for more advanced study, the core knowledge needed for professional education in law and public policy, and the skills useful for careers in business, education, government, and public service.

2. Objectives:

2.1 Demonstrate knowledge of government institutions.: Students will demonstrate their knowledge of what the basic institutions of local, state, and national government are, and what these institutions and the officials within them do to affect the well-being of citizens and of society.

2.2 Describe and analyze major theories.: Students will describe, classify, and analyze the major theories that are used to explain and to assess the basic institutions of government and politics and what they do in times of economic, poltiical, and social change.

2.3 Describe and analyze global politics.: Students will describe, classify, and analyze the major theories, methods, and findings that are used to explain and to assess the roles performed by citizens and by governments in global politics.

2.4 Analyze and classify American law, politics, and policy.: Students will describe, classify, and analyze the major theories, methods, and findings that are used to explain and to assess the roles and functions of citizenship, governance and politics, the legal environment of these, and their implications for the policymaking process.

2.5 Apply critical thinking and research methodology.: Students will deploy critical thinking and their methodological and writing skills to design and to conduct research on an interesting and important problem in government, law, politics, and/or policy, and to deal with real-world goals, events and developments at the local, regional, state, national, and international levels.

B.A. in Sociology

1. Mission Statement: The mission of the B.A. program in Sociology is to provide undergraduate students (both majors and non-majors) with broad knowledge of the theoretical concepts, empirical research findings, and methodological approaches of the discipline of sociology, with an emphasis on theory and research related to social inequality. Sociology majors should develop basic skills in empirical analysis and professional communication in the analysis of social structures, processes, and institutions.

2. Objectives:

2.1 Demonstrate a mastery of theoretical concepts: Students will demonstrate a mastery of the theoretical concepts, empirical research

findings, and methodological approaches of the discipline of sociology, with an emphasis on theory and research related to social inequality.

2.2 Develop skills in empirical analysis: Students will develop basic skills in empirical analysis of social structures, processes, and institutions.

2.3 Develop skills in professional communication: Students will develop basic skills in professional communication appropriate to the discipline of sociology.

B.S. in Economics

1. Mission Statement: The mission of the B.S. in Economics program is to provide an education that allows the student to understand social phenomena from an economics perspective of benefits and costs at an intuitive as well as more rigorous level and to think critically about choices in the face of limited resources in order to understand more clearly the choices available to society and the economic consequences of decisions. The mathematical tools developed in the B.S. program will allow the student access to entry-level positions in economic research in the public or private sector.

2. Objectives:

2.1 Demonstrate knowledge of components of economy : Students will learn about the various components of an economy and how economic decision making based on marginal benefit-marginal cost analysis can be used to explain decision making on the part of households, firms, and the public sector. Students will demonstrate their knowledge of how these components of the economy affect the aggregate economy through class participation and exam questions.

2.2 Analzye economic behavior and evaluate its effects: Students will analyze economic behavior and evaluate the effects of this behavior in terms of microeconomic and macroeconomic outcomes.

2.3 Assess measurement techniques: Students will identify and define types of measurement techniques used in economics, explain how these measurement techniques can be empirically implemented, engage in hands-on mathematical exercises using real-world data, and explain the best uses of them the techniques to study economic behavior and the effects of economic behavior (ECO 4351, 4355)

2.4 Analyze economic decision making: Students will analyze the goals, procedures, and impact of economic decision making in the various sectors of the economy.

2.5 Apply critical thinking skills: Students will apply critical thinking to meet the challenges of a rapidly changing global society by associating real world examples with theory in class discussions and examinations.

B.S. in Public Affairs

1. Mission Statement: The mission of the B.S. in Public Administration program is to prepare students interested in careers in the public and non-profit sectors with the necessary competencies to be successful in management or policy analysis. Graduates should have a firm understanding of financial, human resource, and organizational concepts that will be directly applicable at professional levels in public and non-profit organizations.

2. Objectives:

2.1 Demonstrate knowledge of theoretical concepts: Students will demonstrate their knowledge of the theoretical concepts of public administration as well as the intricacies involved in the particular arenas of government, business, and nonprofits.

2.2 Apply knowledge to meet challenges: Students will learn to analyze and synthesize knowledge derived from government, economics, sociology, and other fields that will prepare them to apply that knowledge creatively to meet the varied and multiple challenges in the public, private, and nonprofit sectors.

2.3 Develop research and writing skills: Students will acquire and develop research and writing skills related to problem identification, policy analysis, design implementation, program evaluation, communication, and other key functions integral to management careers in public, private, and nonprofit organizations.

2.4 Identify ethical implications of complex issues: Students will orally communicate the complex issues associated with public policies and programs as well as learning to uphold the administrative, political, and ethical implications embedded in them.

Graduate Certificate in Crime and Justice Analysis

1. Mission Statement: The mission of the Graduate Certificate in Crime & Justice Analysis is introduces students to graduate study and the field of criminology. The certificate in Crime and Justice Analysis is available to both non-degree and degree-seeking students. Professionals employed in positions within criminal justice agencies and related private organizations pursue the certificate to obtain additional education related to their jobs.

Graduates of this fifteen-credit hour certificate will have a firm understanding of crime and justice analysis and the role of research in criminal justice agencies, planning, and program evaluation.

Note : There are currently no students in this certificate program. While it is still an active program, we have not had students enrolled in 2-3 years. Consequently, we have no assessments on which to base an assessment of strengths or progress

2. Objectives:

2.1 Students will be able to explain, analyze, and describe the nature and distribution of crime in our society.:

2.2 Students will evaluate the specific merits of historical and modern crime control policies.:

2.3 Student will have the ability to analyze trends in crime in our society.:

Graduate Certificate in Economic and Demographic Data Analysis

1. Mission Statement: The Certificate in Economic and Demographic Data Analysis is designed to inculcate in graduate students good understanding of the importance of statistical analysis in a wide array of applied and research areas including demography, economics, and planning and to give students the analytical tools to allow them to effectively use different types of statistical analysis in an array of settings. The certificate is designed for students in degree programs, including PhD programs of study who expect to conduct empirically based research during and following their

program of study as well as non-degree students seeking to gain new skill sets important for career advancement

2. Objectives:

2.1 Understanding Concepts: Student will understand basic statistical concepts and principles including measures of central tendency and dispersion, and probability

2.2 Statistical Techniques: Students will analyze data that are typical of research conducted in the social sciences including economic, political, social and demographic data using different statistical techniques

2.3 Data Analysis Methods: Students will be able to assess between competing methodological approaches in analyzing data

2.4 Practical Application: Students will be able to analyze and interpret results of different analytic techniques in different statistical contexts

Graduate Certificate in Evaluation Research

1. Mission Statement: The mission of the Certificate Program in Evaluation Research is to teach students methodological approaches to evaluation research in the social sciences

2. Objectives:

2.1 Understanding Concepts: Students will identify and apply basic concepts of social statistics and evaluation research methods in the social sciences

2.2 Practical Application: Students will be able to design and implement a program evaluation through project completion

Graduate Certificate in Financial Economics

1. Mission Statement: The mission of the Certificate in Financial Economics program is to provide education in the fundamentals and advanced knowledge and tools needed to apply financial economics effectively and correctly in a variety of careers. The certificate is designed to augment the specialized knowledge used in the practice of financial economics in the private or public sector and is appropriate for a student in the MSAE or Ph.D. in Economics program

2. Objectives:

2.1 Understanding Concepts: Students will explain, and analyze various components of the financial sector of an economy including how economic decision making.

2.2 Analytic Skills: Students will analyze financial economic behavior and evaluate the effects of this behavior in terms of microeconomic and macroeconomic outcomes

2.3 Measurement Techniques: Students will assess measurement techniques used in financial economics and implement them to study financial economic behavior and the effects of financial economic behavior

2.4 Practical Application: Students will analyze the goals, procedures, and impact of financial economic decision making in the various sectors of the economy

Graduate Certificate in Geographic Information Systems

1. Mission Statement: The mission of the Graduate Certificate in Geographic Information Systems is to provide students with a thorough grounding in the theories, concepts and skills needed to apply GIS effectively and correctly in a variety of substantive areas, while simultaneously developing proficiency in the use of industry-standard GIS software products. UT-Dallas certificate recipients will have the background and skills necessary to successfully accomplish GIS projects and support GIS operations in a variety of areas in the public and private sectors which could include infrastructure and facility management, urban and regional planning, environmental conservation, market research, site selection, real estate, civil engineering, or natural resource exploration.

2. Objectives:

2.1 Understanding Concepts: Students will demonstrate a thorough grounding in the theories and concepts needed to apply GIS effectively and correctly

2.2 GIS Software Application: Students will demonstrate the use of industry-standard GIS software products

2.3 Practical Application: Students will develop the in-depth background and skills necessary to successfully accomplish GIS projects and support GIS operations in a variety of substantive areas in the public and private sectors

Graduate Certificate in Local Government Management

1. Mission Statement: The mission of the Graduate Certificate in Local Government Management program is to prepare students for successful careers in local governments. It is also offered as a resource for mid-career professionals and others already operating and seeking to broaden their knowledge of important issues and approaches employed by professional local public administrators. Graduates should have a firm understanding of the responsibility of providing varied services directly to citizens, such as land use planning, law enforcement, water and sewer services, and recreation

2. Objectives:

2.1 Understanding Concepts: Students will have a solid understanding of the complex legal and political environment in which local government managers operate

2.2 Management Skills: Students will learn specific skills and knowledge that will prepare them for challenging positions of management responsibility in local governments

2.3 Practical Application: Students will apply theories and skills related to local government management to service delivery in a practical setting.

Graduate Certificate in Nonprofit Management

1. Mission Statement: The mission of the Certificate Program in Evaluation Research is to teach students about the nature of the nonprofit sector and about professional management practice within the nonprofit context

2. Objectives:

2.1 Understanding Concepts: Students will understand the history, legal and economic status, and management challenges of the nonprofit

sector

2.2 Relevant Management Skills: Students will develop knowledge and competencies from social sciences and public affairs relevant to management and professional practice in the nonprofit sector

M.P.A. in Public Affairs

1. Mission Statement: The mission of the Master of Public Affairs is to educate professionals in public and non-profit management, policy analysis, and applied technology for effective careers in public policy and public management organizational environments. The program serves local, regional, and national communities through professional development programs, public policy, and management analyses, program and policy design, and as a forum for new ideas and approaches to policy and management problems. The curriculum is intended to train students who ultimately assume senior staff, managerial and leadership roles in public agencies and other organizations

2. Objectives:

2.1 Demonstrate knowledge: Students will demonstrate their knowledge of the theoretical foundations of public management and leadership, non-profit management and leadership, policy analysis, and civic engagement in governance.

2.2 Learn spesific skills and knowledge: Students will learn specific skills and knowledge that will prepare them for challenging positions of management responsibility and/or policy analysis in the public, private, and non-profit sectors.

2.3 Develop research and writing skills: Students will develop their research and writing skills so that they can effectively communicate their ideas based on study and research.

2.4 Present complex idea and research finding orally: Students will have the ability to present complex ideas and research findings orally.

M.S. in Applied Sociology

1. Mission Statement: The mission of the M.S. program in Applied Sociology is to teach students theoretical concepts, empirically based knowledge, and research competencies from the discipline of sociology and related fields that will prepare them for employment related to the development, implementation, and assessment of sound social policy, as well as further study in sociology, other social sciences, and related professions.

2. Objectives:

2.1 Demonstrate Ability: Students will demonstrate the ability to apply sociological concepts and research findings, particularly those concepts and findings relevant to political economy and social policy

2.2 Develop Research Skills: Students will develop basic statistical and evaluation research. skills

2.3 Develop Communication Skills: Students will develop basic skills in professional communication appropriate to the discipline of sociology

M.S. in Economics

1. Mission Statement: The mission of the Master of Science in Applied Economics is to provide excellent graduate-level education in economics, with an emphasis on the development of theoretical understanding of economic phenomena, quantitative skills that can be applied to economic problems, and critical thinking to understand how best to apply economic theory and quantitative skills to real-world problems.

2. Objectives:

2.1 Analyze and evaluate componente of an economy: Students will be able to analyze and evaluate various components of an economy in terms of decision-making based on ...as well as how these components of the economy affect the aggregate economy.

2.2 Analyze and Evaluate: Students will analyze economic behavior and evaluate the effects of this behavior in terms of microeconomic and macroeconomic outcomes

2.3 Assess and Implement: Students will assess measurement techniques used in economics and implement them to study economic behavior and the effects of economic behavior.

2.4 Analyze: Students will analyze the goals, procedures, and impact of economic decision making in the various sectors of the economy.

2.5 Apply and Meet Challenges: Students will apply critical thinking to demonstrate how they as professionals will meet the challenges of a rapidly changing global society. (Based on UTD Strategic Plan)

M.S. in Geographic Information Sciences

1. Mission Statement: The mission of the Master of Science in Geographic Information Sciences program is to provide students a rigorous understanding of the technologies, quantitative techniques, models and theories used to acquire and manage spatially referenced information and to analyze spatial processes. UT-Dallas graduates will have strong analytical and numerical skills, knowledge of empirical and quantitative research methodologies, and employ novel geographic information sciences technologies. They will use these capabilities to support public and private sector organizations, to address significant societal issues, and to enhance understanding of the human and natural environments. They will successfully compete at the highest level for jobs requiring geospatial skills and for entry into quality doctoral programs in relevant areas

2. Objectives:

2.1 Demonstrate knowledge: 1. Students will demonstrate their knowledge of the technologies, quantitative techniques, models and theories used to acquire and manage spatially referenced information and to analyze spatial processes

2.2 Develop Analytical Skills: Students will have strong analytical and numerical skills, knowledge of empirical and quantitative research methodologies, and be able to employ them in novel geographic information sciences applications

2.3 Indentify and Apply Methodologies: Students will be able to identify and apply appropriate geospatial methodologies to support public and private sector organizations, to address significant societal issues, and to enhance understanding of the human and natural environments.

Ph.D. in Economics

1. Mission Statement: The mission of the Ph.D. in Economics is to provide a cutting-edge education in micro- and macro-economic theories, in the development of a rigorous toolkit of mathematical and econometric techniques, and in various research areas in economics. This education allows students to think critically about how to approach the analysis of economic problems and to contribute to the knowledge base of the discipline

2. Objectives:

2.1 Do high-level analyses of components of an economy: Students will be able to do high-level analyses of the various components of an economy and how economic decision making based on marginal benefit-marginal cost analysis can be used to explain decision making on the part of households, firms, and the public sector. and how these components of the economy affect the aggregate economy

2.2 Analyze and Evaluate: Students will conduct sophisticated analyses of economic behavior and evaluate the effects of this behavior in terms of microeconomic and macroeconomic outcomes in various models of economic systems.

2.3 Assess and Implement: Students will evaluate the efficacy and usefulness of measurement techniques used in economics and implement appropriate techniques to study economic behavior and the effects of economic behavior.

2.4 Synthesize models: Given goals, procedures, and impact of economic decision making in the various sectors of the economy, students will synthesize models and explain possible outcomes and consequences of research and decision-making based on those models..

2.5 Apply and Meet: Students will explain how they use their own critical thinking about the discipline to identify and study noteworthy issues in our rapidly changing global society. (Based on UTD Strategic Plan)

Ph.D. in Geospatial Information Sciences

1. Mission Statement: The mission of the Doctor of Philosophy in Geographic Information Sciences program is to cultivate innovative researchers capable of advancing the frontiers of knowledge in the geospatial information sciences through improved theories, new technologies, innovative methodologies, sophisticated quantitative analyses, and integrative applications. UT-Dallas Doctoral graduates will find employment in research departments of public and private organizations and in major academic institutions

2. Objectives:

2.1 Demonstrate Knowledge: Students will demonstrate their knowledge of the fundamental theories and concepts underlying the geospatial sciences

2.2 Master Advanced Methodologies: Students will master the advanced methodologies and/or quantitative analyses used in at least one of three geospatial specialization areas: [a] computing and information management, [b] spatial analysis and modeling, or [c] remote sensing and satellite technologies.

2.3 Produce Innovative Research: Students will produce innovative research that advances theory or methodology in the geospatial sciences

2.4 Participate at Academic Conferences:

Students will participate at academic conferences, publish in peer-reviewed journals and find employment in research departments of public and private organizations and in major academic institutions

Ph.D. in Political Science

1. Mission Statement: The mission of the Ph.D. Program in Political Science is to provide a rigorous, sharply focused disciplinary program with strong multidisciplinary links. This program consists of innovative, state-of-the-science graduate education in political methodology and in the fields of democratization, globalization and international relations, political and government institutions and processes, and public management and decision making. Students acquire basic resarch skills and tools and work on research projects, they further develop instructional and presentation skills, and they interact with highly regarded scholars and practitioners in their fields of study. Students are prepared for analytical and administrative positions and responsibilities in academe, firms, government, and other organizations.

2. Objectives:

2.1 Exercise skills.: Students will exercise skills necessary to meet administrative, educational and resarch needs, including critical and constructive thinking, effective communication, rigorous research, and competent management.

2.2 Describe, analyze, and classify: Students will learn to describe, to classify, and to analyze the casuses and consequences of the unprecedented unfolding of democracy on a global scale, its successes and failures, and its opportunitis and problems during an era of globalization and of ongoing subnational, national, and transnational conflicts and negotiations.

2.3 Describe, analyze and classify.: Students will learn to describe, to classify, and to analyze the major theories, methods, and findings that are used to explain the participation of individuals in a variety of institutional settings, how institutions can be designed to promote both collective goods and individual gains, and how changes in institutions have consequences for individuals.

2.4 Describe and explain.: Students will be able to describe and to explain the theories, models and practices of group activity, human decision making, management science, organiztional design, policy making, and risk assessment involving knowledge prodcuers, private firms, and government agencies and departments.

2.5 Other outcomes.: Students will be prepared to teach and to conduct resarch in American, comparative, or international government and politics; democratization, globalization and international relations; governmental and poltiical institutions and processes; and public administration, decision making, and risk management.

Ph.D. in Public Affairs

1. Mission Statement: The mission of the Ph.D. in Public Affairs program is to prepare students for academic careers or high level management positions in public and non-profit organizations by assuring that they gain competency at an advanced level in the core subject matters and methodologies that are central to the study of Public Affairs. Through instruction and research, the faculty will help students obtain a firm understanding of the broad intellectual tradition of public

administration and related fields. It will integrate both traditional and innovative methods of educational delivery and emphasize the application of theory to practice.

2. Objectives:

2.1 Demonstrate Knowledge: Students will demonstrate their knowledge of the interface between the traditions of public management, decision science, and policy analysis and processes with a practical appreciation for the challenges of maintaining and building institutions of governance and a civic culture in a complex, democratic society.

2.2 Theory and Process of Knowledge Acquisition: Students, as executive level administrators, will have a solid grounding in theory and in the process of knowledge acquisition through research that is essential for institutional maintenance and renewal.

2.3 Produce Scholarly Manuscripts: Students, as scholars, will have the ability to produce scholarly manuscripts based on extensive practical experience or field-based research that are worthy of publication in the journals of the field.

2.4 Develop, Present, and Defend Complex Ideas: Students will have the ability to develop, present, and defend both orally and in writing complex ideas based on in-depth scholarly research.

Ph.D. in Public Policy and Political Economy

1. Mission Statement: The mission of the Ph.D. program in Public Policy and Political Economy is to prepare our students for professional positions in research, teaching, and practice in fields related to public policy and political economy, and in both academic and nonacademic settings. We prepare students through instruction in social science and public policy concepts, advanced methodological knowledge and applied social research techniques, and professional communication.

2. Objectives:

2.1 Apply Theories and Concepts: Students will demonstrate the ability to apply social science and public policy theories and concepts.

2.2 Competency in Advanced Methods: Students will develop competency in advanced methods of social science and public policy research and analysis.

2.3 Develop Communication Skills: Students will develop basic skills in professional communication appropriate to the public policy and political economy research and analysis.

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At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Program Missions & Objectives

B.S. in Computer Engineering

1. Mission Statement: The mission of the Computer Engineering Program will be to provide education in the theory and practice of modern computer engineering. We will prepare our graduates to have rewarding and successful careers in a diverse range of computer engineering fields, including materials, devices, circuits, digital systems, signal/speech/image processing, and communications.

This Program is scheduled to begin Fall, 2007.

2. Objectives:

2.1 Apply knowledge to development of eng. systems: Apply knowledge of mathematics, science, and engineering to the development of engineering systems.

2.2 Communicate concepts: Communicate technical concepts in both written documents and oral presentations.

2.3 Function as member of engineering design team: Function as a member of an engineering design team.

B.S. in Computer Science

1. Mission Statement: The mission of the undergraduate Computer Science program is to provide students with a solid foundation in theory and practice of computer science, and to prepare them for productive long-term careers in industry and government. The program prepares the Computer Science graduates to meet the immediate needs of the computer industry, adapt themselves to the rapidly evolving industry needs, and further their education in graduate school.

2. Objectives:

2.1 Be able to solve practical problems: Apply their knowledge of algorithms and programming to the solution of practical and useful Computer Science problems.

2.2 Communicate effectively and work collaboratively: Communicate effectively and work collaboratively

2.3 Design and analyze software: Design and analyze software at the component, subsytem, and software architecture levels and make informed, sound software design tradeoffs.

2.4 Design and analyze Algorithms : Apply knowledge of data-structures, algorithms, and advanced techniques in computer science to design and analyze algorithms for solving practical problems.

B.S. in Electrical Engineering

1. Mission Statement: The mission of the Department of Electrical Engineering is to provide education in the theory and practice of modern electrical engineering. We prepare our graduates to have rewarding and successful careers in a diverse range of electrical engineering fields, including materials, devices, circuits, digital systems, signal/speech/ image processing, and communications.

2. Objectives:

2.1 Apply knowledge to development of eng. systems: Apply knowledge of mathematics, science, and engineering to the development of engineering systems.

2.2 Communicate concepts: Communicate technical concepts in both written documents and oral presentations.

2.3 Function as member of engineering design team: Function as a member of an engineering design team.

B.S. in Software Engineering

1. Mission Statement: The mission of the undergraduate Software Engineering program is to provide students with a solid foundation in theory and practice of software engineering, and to prepare them for productive long-term careers in industry and government. The program prepares Software Engineering graduates to meet the immediate needs of the software development industry, adapt themselves to the rapidly evolving industry needs, and further their education in graduate school.

2. Objectives:

2.1 Develop complex software systems: Apply knowledge of programming, algorithms, data structures, and software engineering to the development of complex software systems.

2.2 Communicate technical concepts: Communicate technical concepts in both written documents and oral presentations.

2.3 Design and analyze software: Design and analyze software at the component, subsystem, and software architecture levels and make informed, sound software design tradeoffs.

2.4 Articulate importance of software lifecycle: Articulate the importance of all phases of the software lifecycle, with emphasis on the need to plan for change and continuously vie to improve the software process.

2.5 Work effectively in a software development team: Work effectively in a software development team and with other engineering professionals.

B.S. in Telecommunications Engineering

1. Mission Statement: The mission of the

Telecommunications Engineering Undergraduate (BSTE) program is to provide education in modern communications networks and systems. The BSTE program provides graduates with a systems level command of a variety of subfields of telecommunication engineering. Our BSTE graduates are key contributors to a variety of telecommunications fields such as data communications, network architecture, wireless communications, optical networking, and next generation networks.

2. Objectives:

2.1 Apply knowledge of mathematics and engineering : Students will be able to apply knowledge of mathematics, science, and engineering to solve telecommunications engineering problems

2.2 Conduct experiments and analyze data: Students will be able to conduct experiments as well as to analyze and interpret data.

2.3 Design system, component to required specs: Students will be able to design a system, component, or process to meet desired needs.

Graduate Certificate in Information Assurance

1. Mission Statement: The mission of the Graduate Certificate with Concentration in Information Assurance is to provide students with foundations in theory and practice of computer security and information assurance and to prepare them for careers in industry and government that require expertise in these areas.

2. Objectives:

2.1 Master Computer and Information Security: The student will be able to demonstrate a mastery of computer and information security.

2.2 Articulate concepts of Data& Applications Security: The student will be able to articulate the major concepts of Data and Applications Security

M.S. in Computer Engineering

1. Mission Statement: The mission of the MS degree program in Computer Engineering is to provide advanced education for engineers who seek the knowledge and skills necessary for the design of complex systems comprised of both hardware and software components. This degree program has an emphasis on the design of high-speed, complex hardware systems and highly reliable, time-critical software systems. We prepare our MSCE graduates to be key contributors to a variety of computer engineering research both in industry and/or academia and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Broad knowledge of computer engineering: Students will demonstrate a broad knowledge of computer engineering and a focused understanding of their area of expertise.

2.2 Develop solutions to practical problems: Students will apply their knowlwedge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

M.S. in Computer Science

1. Mission Statement: The mission of the Master's degree

program in Computer Science is to provide students with a solid foundation in theory and practice of computer science, and to prepare them for productive long-term careers in industry and government. We prepare our graduates to be key contributors to computer science research, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge: Broad in CS, detailed in concentration: Students will demonstrate a broad knowledge of computer science and a focused understanding of their area of expertise.

2.2 Develop solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively, work collaboratively: Students will communicate effectively and work both collaboratively and independently.

M.S. in Electrical Engineering

1. Mission Statement: The mission of the Electrical Engineering Master's degree program (MSEE) is to provide students with an advanced education in Electrical Engineering and prepare them for long and successful careers in industry and government. We prepare our MSEE graduates to be key contributors to electrical engineering design and research, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge: Broad in EE, detailed in concentration: Students will demonstrate a broad knowledge of electrical engineerig and a focused understanding of their area of expertise.

2.2 Develop solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

M.S. in Electrical Engineering - Microelectronics

1. Mission Statement: The mission of the Electrical Engineering-Microelectronics Master's degree program is to provide students with an advanced education in Electrical Engineering and prepare them for long and successful careers in industry and government. We prepare our graduates to be key contributors to microelectronics systems design and research, both in industry and/or academia, and to further their eduction by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge:Broad in EE, focused in microelectronics: Students will demonstrate a broad knowledge of electrical engineering and a focused understanding of microelectronics.

2.2 Apply knowledge to solve practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and

independently.

M.S. in Electrical Engineering - Telecommunications

1. Mission Statement: The mission of the Electrical Engineering-Telecommunications Master's degree program is to provide students with an advanced education in Electrical Engineering and prepare them for long and successful careers in industry and government. We prepare our graduates to be key contributors to telecommunications systems design and research, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge: Broad in EE , focused in Telecom: Students will demonstrate a broad knowledge of electrical engineering and a focused understanding of telecommunications.

2.2 Apply knowledge to solve practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

M.S. in Materials Science and Engineering

1. Mission Statement: The mission of the Materials Science and Engineering Master's degree program is to provide students with an advanced education in Materials Science Engineering and prepare them for long and successful careers in industry and government. We prepare our MS-MSEN graduates to be key contributors to materials science engineering research, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Articulation of Knowledge: Students will demonstrate a broad knowledge of modern material science and engineering.

2.2 Develop solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work collaboratively.

M.S. in Telecommunications Engineering

1. Mission Statement: The mission of the Telecommunications Engineering Master's degree program (MSTE) is to provide students with advanced education in communications networks and systems in Telecommunications Engineering and prepare them for long and successful careers in industry and government. We prepare our MSTE graduates to be key contributors to a variety of telecommunications research, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge: Broad in TE, detailed in concentration: Students will demonstrate a broad knowledge of telecommunications engineering and a focused understanding of their area of expertise. The

Graduate Program in Telecommunication Engineering provides intensive reparation in the design, programming, theory, and applications of telecommunication networks. The Department of Telecommunication Engineering offers courses of study leading to the M. S. and a PhD degree in Telecommunication Engineering. Training is provided for both academically oriented students and students with professional goals in the many business, industrial or governmental occupations requiring advanced knowledge of telecommunications, and network theory and technology. A comprehensive program of evening courses is offered which enables part-time students to earn the master's and Ph.D., degree or to select individual courses of interest. Courses and research are offered in a variety of sub fields of telecommunication engineering, including, fault-tolerant computing, parallel processing digital signal processing, digital communications, modulation and coding, electromagnetic-wave propagation, fiber and integrated optics, lasers, wireless communications, mobile IP, wireless multimedia, DWDM networks, QoS assurance protocols, network design and optimization, telecommunications software, performance of systems, ad-hoc and PCS wireless networks, network security and high speed protocols.

2.2 Develop solutions to practical problems: Student will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effetively and work both collaboratively and independently.

M.S.in Computer Science - Software Engineering

1. Mission Statement: The mission of the Master's degree program in Computer Science- Software Engineering is to provide students with a solid foundation in theory and practice of computer science, and to prepare them for productive long-term careers in industry and government. We prepare our graduates to be key contributors to research in Software Engineering, both in industry and/or academia, and to further their education by entering a doctoral degree program.

2. Objectives:

2.1 Knowledge: Broad in CS, focused in SE: Students will demonstrate a broad knowledge of computer science and a focused understanding of Software Engineering.

2.2 Apply knowledge to solve practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Ph.D. in Computer Engineering

1. Mission Statement: The PhD degree program in Computer Engineering provides intensive preparation for analyzing and creating novel, high-speed, complex hardware systems and highly reliable, time-critical software systems. This degree program prepares our graduates for long and successful professional and/or research careers in industry, government or academia. We prepare our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of

design teams.

2. Objectives:

2.1 Knowledge: Broad in CE, detailed in concentration: Students will demonstrate a broad knowledge of computer engineering and a focused understanding of their area of expertise.

2.2 Create solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Ph.D. in Computer Science

1. Mission Statement: The mission of the PhD degree program in Computer Science is to provide students with an advanced education in Computer Science and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Knowledge: Broad in CS, detailed in concentration: Students will demonstrate a broad knowledge of computer science and a focused understanding of their area of expertise.

2.2 Develop novel solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Ph.D. in Electrical Engineering

1. Mission Statement: The mission of the PhD degree program in Electrical Engineering is to provide students with an advanced education in electrical engineering and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Knowledge: Broad in EE, expert in focused area: Students will demonstrate a broad knowledge of electrical engineering and a focused understanding of their area of expertise.

2.2 Create solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Ph.D. in Materials Sciences and Engineering

1. Mission Statement: The mission of the PhD degree program in Materials Science and Engineering is to provide students with an advanced education in Materials Science and Engineering and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Articulation of Knowledge: Students will demonstrate a broad knowledge of material science and engineering and a focused understanding of their area of expertise.

2.2 Create solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems in modern Materials Science and Engineering.

2.3 Effective Communication: Students will communicate their work effectively in professional forums and publications.

2.4 Independent and Collaborative research: Students shall demonstrate the ability to work both collaboratively and independently.

Ph.D. in Software Engineering

1. Mission Statement: The mission of the PhD degree program in Software Engineering is to provide students with an advanced education in Software Engineering and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Knowledge: Broad in CS, detailed in SE: Students will demonstrate a broad knowledge of computer science and software engineering and comprehension of their area of expertise.

2.2 Develop solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work collaboratively.

Ph.D. in Telecommunications Engineering

1. Mission Statement: The mission of the PhD degree program in Telecommunications Engineering is to provide students with an advanced education in Telecommunications Engineering and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Knowledge: Broad in TE, detailed in concentration: Students will demonstrate a broad knowledge of telecommunications engineering and a

focused understanding of their area of expertise. The Graduate Program in Telecommunication Engineering provides intensive reparation in the design, programming, theory, and applications of telecommunication networks. The Department of Telecommunication Engineering offers courses of study leading to the M. S. and a PhD degree in Telecommunication Engineering. Training is provided for both academically oriented students and students with professional goals in the many business, industrial or governmental occupations requiring advanced knowledge of telecommunications, and network theory and technology. A comprehensive program of evening courses is offered which enables part-time students to earn the master's and Ph.D., degree or to select individual courses of interest. Courses and research are offered in a variety of sub fields of telecommunication engineering, including, fault-tolerant computing, parallel processing digital signal processing, digital communications, modulation and coding, electromagnetic-wave propagation, fiber and integrated optics, lasers, wireless communications, mobile IP, wireless multimedia, DWDM networks, QoS assurance protocols, network design and optimization, telecommunications software, performance of systems, ad-hoc and PCS wireless networks, network security and high speed protocols.

2.2 Create solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Ph.D.in Electrical Engineering - Microelectronics

1. Mission Statement: The mission of the PhD degree program in Electrical Engineering is to provide students with an advanced education in electrical engineering and prepare them for long and successful professional and/or research careers in industry, government, or academia. We provide our students with the expertise to contribute in research and development (R&D) independently, formulate novel problems, develop creative solutions to novel and existing problems, and serve as system architects and leaders of design teams.

2. Objectives:

2.1 Knowledge: Broad in EE, detailed in microelect.: Students will demonstrate a broad knowledge of electrical engineering and a focused understanding of microelectronics.

2.2 Create solutions to practical problems: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems.

2.3 Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.

Undergraduate Certificate in Information Assurance

1. Mission Statement: The mission of the undergraduate certificate in Information Assurance is to provide continuing education in the computer security and information assurance. Students will be prepared to perform their jobs better in an environment where security and information assurance issues are of paramount importance.

2. Objectives:

2.1 Master Data and Applications Security: The student will demonstrate a mastery of Data and Applications Security

2.2 Articulate concepts of Computer & Network Security: The student will articulate the major concepts of Computer and Network Security

2.3 Communicate the principles of Digital Forensics: The student will demonstrate understanding of principles of Digital Forensics

Updated: August 20, 2007

At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Program Missions & Objectives

B.A. in American Studies

1. Mission Statement: The mission of the American Studies BA degree program is to provide a holistic education and interdisciplinary understanding of American culture and society. The American Studies BA degree program provides graduates who have achieved a senior level understanding of the diversity of American experience through history and the complexity of American socioeconomic processes in the global digital age. These graduates work in business, non-profit organizations, media and culture industries. The B.A. in American Studies is also an excellent preparation for law school or graduate school.

2. Objectives:

2.1 Become educated participants in debates: Students will understand the history behind contemporary social, political, and cultural debates, and become educated participants in those debates.

2.2 Achieve excellence in critical thinking skills: Students will achieve excellence in critical thinking, writing, research, and communication skills. They will understand important issues in the U.S. and in the world. They will know how to do research on and write about important issues. They will be able to communicate clearly and effectively with others.

2.3 Analyze factors that shape culture : Students will gain a thorough knowledge of the ways race, ethnicity, class, gender, sexuality, economy, and technology shape individuals, institutions, and culture. They will be able to understand and comment on the implications of public policies and corporate behavior.

2.4 Analyze popular texts and images: Students will become critical consumers of popular texts and images.

2.5 Apply global citizen perspective: Students will acquire the knowledge and perspective of global citizens. They will develop a better understanding of global conflicts, poverty, and

environment issues.

B.A. in Gender Studies

1. Mission Statement: The mission of the Gender Studies Program is to provide a liberal education that equips students to live and work in a constantly changing world. This interdisciplinary Program is focused upon the ways gender shapes and is shaped by individuals, social institutions, and culture. The Program provides undergraduate students with opportunities to think critically about gender and to apply insights from the field to their work in social service, education, the arts and sciences, business, and the professions. The program's mission is accomplished through courses taught in gender studies, and in art, literature, history, psychology, sociology, politics, economics, and other disciplines, through internships, and outside programming (e.g., lectures, performances).

2. Objectives:

2.1 Examine gender as a system of ideas: Students will analyze gender as a system of ideas that affects women and men by privileging particular definitions of masculinity and femininity and regulating expressions of sexuality.

2.2 Recognize gender as a social construct: Students will analyze gender as a social construction that intersects with class, race, age, ethnicity, nationality, religion, sexual orientation, and sexual identity

2.3 Integrate insights about gender among sciences: Students will integrate insights about gender from the social and behavioral sciences, humanities, and the arts, and to use gender as a way to interrogate the boundaries between these existing bodies of knowledge.

2.4 Understand fundamental methodologies of gender study: Students will recognize, understand, apply, and evaluate the fundamental methodologies of women and gender studies.

2.5 Evaluate the logic informing gender-based claims: Students will evaluate the logic informing gender-based claims circulating in the larger culture, and recognize the social and political consequences of these claims

B.A. in Interdisciplinary Studies

1. Mission Statement: The mission of the Interdisciplinary Studies BA degree program is to provide a typical lberal arts education in a flexible but structured format. The breadth of our program reflects the concept that it is not just what students know but how they can use their knowledge. Thus students are required to complete two foundations to provide them with knowledge in two separate fields of study. Then the students create a thematic concentration in their field of academic interest.

Undergraduates who enroll in the Interdisciplinary Studies BA program are encouraged to pursue an individualized and interdisciplinary educational path that is not available in more traditional majors. In this manner, students can tailor their degrees to fit the individual career paths that they have chosen ranging from careers in the work place, in the teaching profession, in graduate school and in professional schools. Included in this flexible degree plan are courses in Statistics and Writing, so that students graduating from with a BA in IS have good writing and analytical skills, which enable them to go beyond mere surface comprehension to the interpretation of data presented to them by various forms of the media.

Also the Interdisciplinary Studies BA program is

designed to accommodate both traditional and non-traditional students with classes offered during the day and at night. Students can see their advisors by appointment during the day or early evening.

Another goal for the BA in IS is to provide a quality educational experience that is appreciated by our students. To that end, our academic advisors work toward helping students fulfill their educational goals and directing them toward appropriate campus resources to help them with personal problems which may be affecting their academic performance.

The flexibility in the BA in IS helps students combine classes from the wealth of courses available throughout the university and enables them to flourish in the ever changing academic, teaching and business environment.

2. Objectives:

2.1 Demonstrate solid communication skills: Students will demonstrate an ability to communicate effectively.

2.2 Achieve diverse education in three fields: Students will achieve diverse education in three separate fields exemplified by their abilities to communicate with experts in disciplines as well as serve as interdisciplinary communicative liaisons.

2.3 Meet constant changes of global society: Students will be prepared to meet the constant changes of a global society by designing their own degree plans that arise from their analysis of what will be society's demands and how those demands fit their own skills and talents.

B.S. in Interdisciplinary Studies

1. Mission Statement: The mission of the Interdisciplinary Studies BS degree program is to provide a typical liberal arts and science education in a flexible but structured format heavily weighted toward science. The breadth of our program reflects the concept that it is not just what students know but how they can use their knowledge. Thus students are required to complete two foundations to provide them with knowledge in two separate fields of study. In the BS in IS one of the foundations must be Science. Then the students create a thematic concentration in their field of academic interest. (The concentration must contain three additional science courses plus a statistics course.)

Undergraduates who enroll in the Interdisciplinary Studies BS program are encouraged to pursue an individualized and interdisciplinary educational path that is not available in more traditional majors. In this manner, students can tailor their degrees to fit their individual career paths. These range from careers in the work place, in the teaching profession, in graduate school and in professional schools. Included in this flexible degree plan are courses in Calculus, Statistics and Writing, so that students graduating from with a BS in IS have good writing and analytical skills, which enable them to go beyond mere surface comprehension to the interpretation of data.

Also the Interdisciplinary Studies BS program is designed to accomodate both tradional and non-traditional students with classes offered during the day and at night. Students can see their advisors by appointment during the day or early evening.

Another goal for the BS in IS is to provide a quality science oriented educational experience that is appreciated by our students. To that end, our academic advisors work toward helping students fulfill their educational goals and directing them toward appropriate campus resources to help them with personal problems which may be affecting their academic performance.

The flexibility in the BS in IS helps students combine science classes in new and different combinations from the wealth of courses available throughout the university and enables them to flourish in the ever changing

academic, teaching and business environment.

2. Objectives:

2.1 Apply knowledge of science, mathematics and statistics: Students will demonstrate an ability to apply their knowledge of science, mathematics and statistics in varied contexts.

2.2 Demonstrate an ability to communicate effectively: Students will demonstrate an ability to communicate effectively

2.3 Meet the constant demands of a global society: Students will be prepared to meet the constant changes of a global society by designing their own degree plans that arise from their analysis of what will be society's demands and how those demands fit their own skills and talents.

Chess Certificate

1. Mission Statement: The mission of the Chess in Education Certificate is to provide educators with practical examples of using chess in K-12 classrooms to teach critical thinking, mathematics, social skills, and reading. The Chess in Education Certificate provides educators with the skills needed to develop chess curricula that help students reach educational goals. These educators are prepared to improve the academic performance and develop the humanistic potential of their students by exposing them to chess. Educators are further enabled to propose, and pursue funding for, chess educational efforts at their institutions.

2. Objectives:

2.1 Demonstrate Knowledge: The student will be able to explain the rules of chess, apply basic strategies in playing chess, notate, and analyze a chess game.

2.2 Improve Curricular Process: The student writes lesson plans that combine chess and educational goals, teaches those plans, and reflects on what could be improved in this curricular process.

2.3 Research and Develop: The student researches and develops a proposal for a chess program for members of a particular community institution (such as a school, library, recreation center, prison, retirement home, etc.).

M.A. in Interdisciplinary Studies

1. Mission Statement: The Master of Arts in Interdisciplinary Studies is designed for students who wish to continue their intellectual development within an interdisciplinary framework and for those with specialized training who wish to broaden their education. The program provides students the opportunity to study and investigate topics and problems from the perspectives of more than one discipline and to develop a better understanding of many of the social, cultural, and scientific forces which affect the individual and society.

2. Objectives:

2.1 articulate critical contemporary questions: The student will atriculate critical contemporary questions using interdisciplinary techniques.

2.2 Align program of study to career goals: The student will align their program of study to their specific career goals and show evidence of personal growth.

2.3 Interdisciplinary depth in concentration area: The student will demonstrate fundamental

knowledge, a firm understanding of the methodologies and interdisciplinary depth in a concentration area.

2.4 disciplinary approaches to interdisciplinary probl: The student will apply analytical, methodological, and disciplinary approaches to study interdisciplinary problems using multiple perspectives with rigor.

2.5 conceive, formulate and report: The student will formulate and report on an interdisciplinary project that utilizes an integrated approach to the topic and synthesizes the knowledge from more than one discipline.

Teacher Education

1. Mission Statement: The UTD Teacher Certification program provides rigorous, university-based education to students interested in making elementary or high school teaching and/or administration their career. The UTD Teacher Certification Program offers prospective pre-college teachers extensive field experience with preparation options for both undergraduate and post-baccalaureate students that include student teaching or a supervised post-baccalaureate internship. With careful use of electives, students from any academic program in the University can complete both an academic degree and teacher preparation within their regular degree plan. Graduates of the UTD Teacher Certification Program are certified by the State of Texas as highly-qualified for pre-college teaching.

2. Objectives:

2.1 Analyze Human Developmental Processes: Students will analyze human developmental processes and develop a personal philosophy for teaching based on their study of the history of American public schooling and the issues critical in a diverse democratic society for a well educated populace.

2.2 Create Positive/Productive Classroom Environment: Students will master the elements required to create a positive, age-appropriate, and productive classroom environment for their certification field and level

2.3 Ability to Design Assessment/Instruction Modules: Students will demonstrate a mastery of the content in their teaching field and demonstrate their ability to design instruction and assessment modules and lesson plans which promote student learning.

2.4 Complete Student Teaching Requirement: Students will demonstrate the successful practice of the art and science of classroom teaching by successfully completing a 12-week student teaching requirement or a one-year internship in a public school

2.5 Student performance on State certification exams: In Texas, all teacher certification programs are evaluated by the performance on two state-mandated exams (TExES) of all the students who complete the program

Updated: August 20, 2007

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At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Program Missions & Objectives

B.S. in Accounting and Information Management

1. Mission Statement: The mission of the Accounting and Information Management Undergraduate Program of The University of Texas at Dallas' School of Management is to provide accounting education. The Accounting and Information Management Undergraduate Program provides graduates that have achieved a senior level command of a variety of subfields of accounting. These graduates are leading innovators in the business world, adapting to the changing environment of Information Management.

2. Objectives:

2.1 Develop functional knowledge of their speciality: Students will develop functional knowledge of their major specialty, an appreciation of the interrelation of the functional areas, and broad-based current business knowledge.

2.2 Develop competency in communication: Students will develop competency in oral, written and interpersonal communications.

2.3 Analyze and intepret numerical data: Students will develop skills in analyzing and interpreting numerical data, and in reasoning and problem solving through mathematical processes.

2.4 Demonstrate basic applications of technology: Students will be proficient in the use of basic applications of technology.

2.5 Develop a regard for human values: Students will develop a regard for human values and the ability to make judgments based on ethical and environmental considerations.

2.6 Identify multicultural dimensions: Students will recognize the multicultural aspects and international dimensions of the societies and world in which we live and be familiar with knowledge and methods necessary to deal with related problems.

2.7 Analyze and intepret accounting information: Students will develop skills in analyzing and interpreting accounting information as well as an understanding of the decisions faced by various

users of financial accounting information.

2.8 Develop competency in professional communications: Students will develop competency in professional communications and knowledge of career paths in accounting.

2.9 Apply accounting controls : Students will demonstrate proficiency in the use of basic applications of accounting controls including technology and security controls as they relate to accounting information.

2.10 Apply financial principles : Students will demonstrate applications of financial principles including those used in the preparation of financial statements.

2.11 Demonstrate managerial accounting concepts: Students will demonstrate managerial accounting concepts and techniques used to support decision-making by managers.

B.S. in Business Administration

1. Mission Statement: The mission of the Business Administration Program is to deliver high quality management education to a diverse undergraduate population. Students are challenged to think strategically and develop strong analytical skills. The program emphasizes technological proficiency, global awareness, ethical awareness and practical knowledge.

2. Objectives:

2.1 Develop functional knowledge of their major: Students will develop functional knowledge of their major specialty, an appreciation of the interrelation of the functional areas, and broad-based current business knowledge.

2.2 Develop competency in communication: Students will develop competency in oral, written and interpersonal communications.

2.3 Develop analytical skills to solve problems: Students will develop skills in analyzing and interpreting numerical data, and in reasoning and problem solving through mathematical processes.

2.4 Apply knowledge of technology applications: Students will be proficient in the use of basic applications of technology.

2.5 Develop the ability to make ethical judgments: Students will develop a regard for human values and the ability to make judgments based on ethical and environmental considerations.

2.6 Recognize multicultural dimensions: Students will recognize the multicultural aspects and international dimensions of the societies and world in which we live and be familiar with knowledge and methods necessary to deal with related problems.

B.S. in Finance

1. Mission Statement: The mission of the Bachelor of Science in Finance program is to provide students with both practical and theoretical training in financial decision making. Students who choose this program will develop the knowledge of how to make sound financial decisions and the analytical skills necessary to make such decisions given the resources available.

2. Objectives:

2.1 Develop functional knowledge of their major: Students will develop functional knowledge of their major specialty, an appreciation of the interrelation of the functional areas, and broad-based current business knowledge.

2.2 Develop competency in communication: Students will develop competency in oral, written and interpersonal communications.

2.3 Develop analytical skills to solve problems: Students will develop skills in analyzing and interpreting numerical data, and in reasoning and problem solving through mathematical processes.

2.4 Apply knowledge of technology applications: Students will be proficient in the use of basic applications of technology.

2.5 Develop ability to make ethical judgments: Students will develop a regard for human values and the ability to make judgments based on ethical and environmental considerations.

2.6 Recognize multicultural dimensions: Students will recognize the multicultural aspects and international dimensions of the societies and world in which we live and be familiar with knowledge and methods necessary to deal with related problems.

2.7 Develop an understanding of financial markets: Students will develop an understanding of financial markets, financial institutions, and their regulation.

2.8 Develop an understanding of investment management: Students will develop an understanding of investment management.

2.9 Develop an understanding of financial decisions: Students will develop an understanding of the financial decisions faced by companies and how they should be resolved.

Certificate - Advanced Intl Program Oil & Gas Financial Management

1. Mission Statement: The mission of the Advanced International Program in Oil & Gas Financial Management, a non-degree certificate program, is to give participants from a wide variety of countries an improved understanding of accounting, financial and administrative issues pertaining to oil and gas operations including addressing a number of related economic, legal, taxation, budgeting, planning, auditing, information system, managerial and strategic planning aspects. A major objective is the exchange of experience and ideas among participants from a variety of oil-producing countries and their interaction with faculty.

2. Objectives:

2.1 Develop Understanding of Oil and Gas Accounting: Students will develop the understanding of accounting principles, practices and procedures relating to various phases of oil and gas operations. They evaluate the diversity of financial reporting and disclosure practices around the world, international accounting classifications, foreign currency translation.

2.2 Develop Understanding of Oil and Gas Law and Tax: Students will develop the understanding of different contractual arrangements used to explore, develop and produce oil and gas including the fundamentals of licenses, concessions, risk service agreements and production sharing contracts. Students evaluate: the various taxation systems around the world.

2.3 Demonstrate Strategic and Tactical Planning: Students will demonstrate Strategic Planning, Budgeting and Performance Reporting. Students assess Project Financing; an appraisal of technical aspects of project evaluation, and details of project economics

2.4 Illustrate Int. Financing - Oil and Gas Operations: Students will illustrate project financing

and capital requirements; financing techniques used by international lenders in the areas of petroleum development. Students evaluate the goals that corporate financial managers pursue in their investment and financing activities.

Certificate - Lean 6 Sigma

1. Mission Statement: C4ISN aims to promote university alliances with industry and government through education, research, and consultation, advance scientific and operational knowledge in intelligent supply networks for manufacturing and services management and be the knowledge portal for the supply chain community. Graduates are prepared for additional responsibilities or promotion either with their current employer or another employer. Industries employing graduates include manufacturing, consulting, services or software.

2. Objectives:

2.1 Articulate Define Phase : Students will be able to articulate Lean 6 Sigma Define phase activities and tools.

2.2 Articulate Measure and Analyze Phase : Students will be able to articulate Lean 6 Sigma Measure and Analyze phase activities and tools.

2.3 Articulate Control and Improve Phase: Students will be able to articulate Lean 6 Sigma Control and Improve phase activities and tools.

Certificate - Product Lifecycle Management

1. Mission Statement: Product Lifecycle Management aims to promote university alliances with industry and government through education, research, and consultation, advance scientific and operational knowledge in intelligent supply networks for manufacturing and services management and to become the knowledge portal for the supply chain community. Graduates are prepared for additional responsibilities or promotion either with their current employer or another employer. Industries employing graduates include manufacturing, consulting, services or software.

2. Objectives:

2.1 Articulate Product Life Cycle Mgm`t Processes: Students will clearly articulate product life cycle management processes, its challenges and opportunities.

2.2 Demonstrate Management Processes: Students will demonstrate a mastery of the management processes involved in PLM.

2.3 Demonstrate Use of Information Technology Tools: Students will demonstrate the effective use of information technology tools available in a PLM software implementation.

2.4 Master Processes in Portfolio Management: Students will master the challenges and processes involved in portfolio management and product cost management

2.5 Communicate Value Management: Students will communicate the financial and managerial accounting value proposition involved in a PLM implementation.

Certificate - Sourcing Management

1. Mission Statement: The Online Sourcing Management Professional Certificate aims to promote university alliances with industry and government through education, research, and consultation, advance scientific

and operational knowledge in intelligent supply networks for manufacturing and services management and become the knowledge portal for the supply chain community. Graduates are prepared for additional responsibilities or promotion either with their current employer or another employer. Industries employing graduates include manufacturing, consulting, services or software.

2. Objectives:

2.1 Learn Basics of Sourcing Management: Students will learn how to implement the basic concepts of sourcing management which include: 1) strategic sourcing, 2) price and cost analysis, 3) spend analysis, 4) tools for supply management, 5) supplier enablement and automation, 6) supplier selection, 7) competitive bidding, 8) risk management, 9) contract law, 10) contract management

2.2 Learn Advanced Concepts in Sourcing Management : Students will learn how to implement the advanced concepts in sourcing management which include: 1) business ethics, 2) strategic supply planning, 3) negotiations, 4) supply chain alignment, 5) new product introduction, 6) total cost of ownership, 7) supplier performance management, 8) quality systems, 9) logistics and supply chain management, 10) financial analysis110 uniform commercial code.

2.3 Apply Global Supply Strategies: Students will be able to distinguish and apply the skills necessary for developing global supply sources, international logistics and supply chain, and international trade.

Certificate in Entrepreneurship

1. Mission Statement: The Entrepreneurial Development Series is a practitioner-oriented program of education and skill development designed for entrepreneurs, aspiring entrepreneurs, key employees in entrepreneurial firms, and managers in established firms seeking new growth opportunities through entrepreneurship. The objective of the program is to provide participants with a broad overview of the knowledge base required to successfully initiate, nurture and grow a technology-based entrepreneurial venture, illustrated with real-world examples provided by practitioners. The eight-week program is taught by venture capitalists, legal experts, UTD faculty, consultants and experienced entrepreneurs and startup executives.

2. Objectives:

2.1 Finding and Evaluating Opportunities: The student will be able to discuss and interpret the key concepts essential to the identification and evaluation of new venture opportunities and the protection of intellectual property.

2.2 Strategy, Market Research & Business Models: The student will be able to discuss and interpret the key concepts of business model design and validation, entrepreneurial marketing, market research, strategy and customer validation.

2.3 Product Dev., Pricing, Positioning & Customer Mgmt: The student will be able to discuss and interpret the key concepts of entrepreneurial market entry, positioning, value propositions and product development strategies.

2.4 Legal Issues, Recruiting, Hiring & Compensation: The student will be able to discuss and interpret the concepts of organizational design and the legal and regulatory considerations pertaining to organizational formation, recruiting, hiring and compensation.

2.5 Preparing the Business Plan and Investor Pitch: The student will be able to discuss and interpret the objectives and priorities of investors

and the essential considerations in the development of the business plan and investor pitch.

2.6 Financing Startup and Growth: The student will be able to identify the various sources of venture financing, including angel investors, venture capitalists, banks and goverment programs, and discuss and interpret the opportunities, requirements, and expectations of each.

2.7 Managing the Emerging Enterprise: The student will be able to identify and discuss the issues, challenges and approaches to building a company from an early startup to an enterprise capable of sustained and profitable growth.

2.8 Entrepreneurial Leadership and Skills: The student will be able to discuss and interpret the essential concepts of entrepreneurial leadership, negotiation and investor and public relations.

Certificate in Executive & Professional Coaching

1. Mission Statement: The mission of the Executive and Professional Coaching Program is to provide students with a thorough grounding in the theories, concepts and skills needed to perform individual and group coaching within an organizational setting; while simultaneously developing proficiency for credentialing by the International Coach Federation. UT-Dallas certificate recipients will be educated in the origin, development, techniques and theoretical underpinnings of coaching within a variety of organizational systems. These graduates are leaders in the field of Executive Coaching at a local, state and national level.

2. Objectives:

2.1 Knowledge Base of Professional Coaching: Students will be able to explain and describe the origin, development and structure of the coaching profession, including the 11 International Coach Federation core competencies.

2.2 Knowledge Base of Organizations : Students will develop the in-depth background and skills necessary to successfully demonstrate the techniques of coaching unique to organizational settings and 3rd party arrangements.

2.3 Advanced Coaching Models and Methods: Students will be able to distinguish and apply a variety of assessments, models and research practices utilized in organizational coaching.

Certificate of Leadership

1. Mission Statement: The Certificate of Leadership will provide experienced managers' skills development training in interpersonal communications, collaboration and leadership skills. Certificate recipients will be better equipped in the work place to lead teams, manage direct reports, and achieve the stated objects of their organizations mission and share the vision of their company's leadership team.

2. Objectives:

2.1 Develop Leadership Awareness: Students will develop awareness that leadership is a personal choice and a learned skill.

2.2 Differentiate between Managing and Leading: Students will be able to differentiate between managing and leading.

2.3 Analyze Role of Effective Leadership: Students will analyze their role in the company and build compelling evidence of the organizational value of effective leadership.

2.4 Apply Leadership Abilities: Students will be

able to develop personal buy-in and motivation for applying leadership abilities.

Certificate of Management

1. Mission Statement: The mission of the Certificate of Management is to provide experienced managers with the thorough grounding of all functional areas necessary to be successful in the business world. The certificate program emulates the primary components of a traditional MBA program. The participants in the program will lean in a highly concentrated environment from senior members of the faculty who teach in the EMBA program the practical skills that they can use on a daily basis in the work force.

2. Objectives:

2.1 Apply Knowledge of Business and Management : Students will be able to apply knowledge of Business and Management including: The Concept of Business and Profit; Economics of a Market System; Goals and Strategy, The Management Process, Organizational Structure; Essential Management Tools and Techniques

2.2 Analyze Organizational and Operational Structures: Students will be able to analyze organizational and operational structures including, types of organizational structure, decision making and accountability, management tools and techniques, operational planning, value creation and strategic planning.

2.3 Implement IM and Accounting Systems: Students will apply lessons and concepts learned in class to be able to implement IM and accounting systems concepts that will include: knowledge management, MIS technology, software and systems; apply this knowledge to accounting, marketing and HR enterprise processes and solutions.

2.4 Financial Systems, Risk Mgm`t & Strategic Planning: Students will be able to understand financial systmes, risk management and strategic planning as it relates to: financial controls, evaluating risk, new markets and overcoming obstacles to value creation growth and ROI.

Executive M.S. in Healthcare Management

1. Mission Statement: The mission of the Executive Master of Science in Healthcare Management is to help physicians advance their professional careers by providing them with the critical business and interpersonal skills they need to become more effective leaders of their healthcare organizations.

2. Objectives:

2.1 Operating Management: Students will demonstrate the knowledge and skills required to improve operating efficiency in a healthcare organization.

2.2 Financial Management: Students will demonstrate the ability to make financial decisions that create economic value.

2.3 Strategic Thinking: Students will demonstrate the strategic thinking skills required to create sustainable competitive advantage in a healthcare organization.

2.4 Leadership Effectiveness: Students will develop the interpersonal skills required to improve personal leadership effectiveness in a healthcare organization.

Graduate Certificate in Healthcare Management

1. Mission Statement: The mission of the Graduate Certificate in Healthcare Management is to help physicians advance their professional career by providing them with the critical business skills needed to become more effective leaders of their healthcare organizations. The Certificate is earned by completing any five of the nine classes which constitute the Master of Science in Healthcare Management. It is designed for experienced physician executives who wish to selectively improve their skills in one or more of the four Learning Goals of the Masters program.

2. Objectives:

2.1 Operating Management: Students will demonstrate the knowledge and skills required to improve operating efficiency in a healthcare organization.

2.2 Financial Management: Students will demonstrate the ability to make financial decisions that create economic value.

2.3 Competitive Advantage: Students will demonstrate the strategic thinking skills required to create sustainable competitive advantage in a healthcare organization.

2.4 Personal and Organizational Effectiveness: Students will develop the interpersonal skills required to improve personal leadership effectiveness in a healthcare organization.

Graduate Certificate Marketing

1. Mission Statement: The mission of the Graduate Certificate in Marketing Program is to provide executives, managers and entrepreneurs with specific avenues for career and professional development. The GCMP provides graduates the environment and tools to develop basic marketing skills, exposure to the latest marketing advances and trends as well as to teach relevant marketing concepts and philosophies.

Another related objective of this program is to provide a forum for all participants to learn directly from some of the foremost academic and industry experts in their respective marketing areas as well as to provide stimulating and directed classroom discussions that bear on a range of relevant, current and topical marketing issues as used in the corporate environment.

This Program is scheduled to begin 2007-2008.

2. Objectives:

2.1 Conceptual Understanding of Marketing Principles: Students will develop a thorough background of the basic principles of Marketing and their applications and to recognize their significance and scope in Marketing Management.

2.2 Ability to Evaluate and Apply Marketing Management: Students will demonstrate an ability to evaluate the Marketing Management functions and their role in a typical multi- function organization as well as their impact on business success. Students will develop the ability to apply specific marketing techniques and strategies.

2.3 Learn Marketing Knowledge Base and Content : Students will master the terminology and definitions of marketing and its influence on the consumer decision making process.

2.4 Learn Marketing Communication and Verbiage: Students will demonstrate effective Marketing communication skills in specific marketing contexts and formats using the relevant diction and terminology.

M.A. in International Management Studies

1. Mission Statement: The mission of the MA in International Management Studies is to provide graduate education in international business. Program graduates receive masters level knowledge in general managerial skills and in international management, including studying the cultural, socio-political, economic, and geographic environments of international trade. These graduates have developed the skills needed for careers in international business, involving trade across national boundaries, management practices within foreign nations, and management on a global basis.

2. Objectives:

2.1 Develop basic knowledge of management : Students will develop a basic knowledge of management including accounting, finance, and marketing.

2.2 Assess economic differences in global environment: Students will be able to assess the economic differences present in the global business environment

2.3 Analyze cultural and political differences: Students will be able to analyze the cultural and political differences present in the global business environment

2.4 Determine strategies appropriate to environment: Students will determine the strategies appropriate to various environmental situations

2.5 Develop appreciation for advantages of diversity: Students will develop an appreciation for the advantages of a diverse, global environment

M.B.A. - Cohort

1. Mission Statement: The mission of the Cohort Masters of Business Administration is to provide a broad management education plus the opportunity to concentrate in an area of interest. Program graduates receive masters level knowledge of the principles and techniques of finance, marketing, accounting, and statistics. Graduates master both the technical and the human aspects of management, learning how to apply cutting-edge technology and analytical methods as well as how to maximize organizational capabilities and global relationships. These graduates are able to meet the challenges of a rapidly changing, technology-driven, global society.

2. Objectives:

2.1 Develop broad-based knowledge of management: Students will develop a broad-based knowledge of management including accounting, finance, statistics and marketing.

2.2 Demonstrate strategic thinking : Students will demonstrate strategic thinking by applying business principles and techniques to develop and implement solutions to achieve business goals

2.3 Utilize the strengths of a global environment: Students will be able to utilize the strengths of a diverse, multicultural, global business environment

2.4 Develop the ability to leverage human capital: Students will develop the ability to leverage human capital

2.5 Develop the ability to make ethical decisions: Students will develop the ability to make decisions that meet ethical and legal standards of society

2.6 Demonstrate effective communication skills: Students will demonstrate effective communication

skills in written and oral presentations

2.7 Develop the ability to apply analytical methods: Students will develop the ability to apply analytical methods to improve business decision making

M.B.A. - Executive Education

1. Mission Statement: To provide you, our student, with an educational experience and a personal improvement experience that profoundly enhances your success on the job and that takes you as high in your career as you choose to go.

2. Objectives:

2.1 Functional Areas: Students will develop a broad-based knowledge of management including accounting, finance, statistics and marketing.

2.2 Strategic thinking: Students will demonstrate strategic thinking by applying business principles and techniques to develop and implement solutions to achieve business goals.

2.3 Global business: Develop awareness and knowledge--appropriate for business leaders--of the global and multicultural nature of business and develop awareness and knowledge of legal and ethical issues.

2.4 Leadership Skills: Develop leadership skills appropriate for a high change environment where teams are used extensively.

2.5 Legal and Ethical: Students will develop the ability to make decisions that meet ethical and legal standards of society.

2.6 Individual Development: Enhance the personal development of students. This includes interpersonal skills, communication skills, and mgmt skills.

2.7 Analytical Skills: Develop analytical skills for diagnosing and solving business problems and for developing recommendations.

2.8 Executive Perspective: Students will gain knowledge and skills for solving executive-level problems.

M.B.A. - Global Leadership Executive M.B.A.

1. Mission Statement: The Global Leadership Executive MBA program (GLEMBA) delivers curriculum for a Masters of Business Administration degree specializing in international business for experienced professionals and managers. Program graduates receive master level knowledge of the principles and techniques of core business disciplines such as accounting, finance, and marketing and organizational behavior as well as the international application of these disciplines.

Graduates learn how to apply technology and analytical methods to maximize organizational capabilities and global relationships.

2. Objectives:

2.1 Broad based knowledge: Required knowledge of the economic, political, social, cultural, and technological environments of international business today . Recognize the major international business institutions and their interrelationships . Articulate the forces of globalization and its impact on business . Identify key differences between national and international business

2.2 Develop Leadership Skills: 2. Leadership skills and a global mindset required to work in complex global environments . Understand the role

of culture in work and business situations . Identify cross-cultural differences and synergies . Compare business situations from a cross-cultural perspective

2.3 Develop Problem Solving Skills: Skills for diagnosing and solving business problems and for developing action recommendations . Interpret country research and analyze data to assess market size and potential . Design a market entry approach . Formulate a five year financial forecast

2.4 Develop Skills: Skills and judgment necessary for implementing business decisions . Distinguish external and internal factors that influence corporate decisions . Interpret data and information to analyze competitive position

2.5 Gain International Business Knowledge: 5. Knowledge and skills in the primary functional areas of business and its international applications. . Identify key strategic issues such as what business a company should be in; what is the market, what is the sustainable competitive advantage . Judge how marketing resources should be allocated in a specific situation . Interpret the concepts of customer focus, satisfaction and brand loyalty. . Recognize how financial decisions are made . Analyze financial problems and produce a solution

M.B.A. - Professional

1. Mission Statement: The mission of the Masters of Business Administration is to provide a broad management education plus the opportunity to concentrate in an area of interest. Program graduates receive masters level knowledge of the principles and techniques of finance, marketing, accounting, and statistics. Graduates master both the technical and the human aspects of management, learning how to apply cutting-edge technology and analytical methods as well as how to maximize organizational capabilities and global relationships. These graduates are able to meet the challenges of a rapidly changing, technology-driven, global society.

2. Objectives:

2.1 Develop broad-based knowledge of management: Students will develop a broad-based knowledge of management including accounting, finance, statistics and marketing

2.2 Demonstrate strategic thinking : Students will demonstrate strategic thinking by applying business principles and techniques to develop and implement solutions to achieve business goals

2.3 Utilize the strengths of a global environment: Students will be able to utilize the strengths of a diverse, multicultural, global business environment

2.4 Develop the ability to leverage human capital: Students will develop the ability to leverage human capital

2.5 Develop the ability to make ethical decisions: Students will develop the ability to make decisions that meet ethical and legal standards of society

2.6 Demonstrate effective communication skills: Students will demonstrate effective communication skills in written and oral presentations

2.7 Develop the ability to apply analytical methods: Students will develop the ability to apply analytical methods to improve business decision making

M.S. in Accounting and Information Management

1. Mission Statement: The mission of the MS in Accounting and Information Management program is to provide graduate education in accounting. Program graduates receive a masters level command of accounting principles, applications, and professional skills from an accounting information provider perspective. These graduates have developed the skills needed for the core services identified by the Institute of Certified Public Accountants and often sit for the Uniform CPA Examination. They pursue careers in auditing, consulting, and tax services or information and software management

2. Objectives:

2.1 Develop skills in analyzing and interpreting info: Students will develop skills in analyzing and interpreting accounting information as well as an understanding of the decisions faced by various users of financial accounting information

2.2 Apply accounting controls : Students will apply accounting controls including technology and security controls as they relate to accounting information

2.3 Apply financial accounting principles: Students will apply financial accounting principles including those used in the preparation of financial statements

2.4 Apply managerial accounting principles: Students will apply managerial accounting concepts and techniques to support decision-making by managers

2.5 Develop skills in communications and ethics: Students will develop skills in professional communications, and consider ethical problems in accounting settings

M.S. in Information Technology and Management

1. Mission Statement: The mission of the MS in Information Technology and Management is to provide graduate education in bridging the gap between technology and business. Program graduates receive masters level knowledge in general business and information technology, including IT-based business models, managerial issues in IT design, and IT adoption and diffusion. These graduates have developed the skills needed for careers in applying information technology to business problems and creating efficient and effective solutions

2. Objectives:

2.1 Develop basic knowledge of management: Students will develop a basic knowledge of management

2.2 Develop a foundation of knowledge in info tech: Students will develop a foundation of knowledge in information technology, including data management, data communication, information processing, and application development

2.3 Apply knowledge to improve info tech: Students will be able to apply knowledge to improve the design and operation of information technology

2.4 Apply knowledge to improve business practice: Students will be able to apply knowledge of technology to improve business practice.

M.S. in Management and Administative Sciences

1. Mission Statement: The mission of the MS in Management and Administrative Sciences is to provide basic concepts in management and in-depth expertise in a specialized management area. Program graduates gain specialized knowledge in one of the following areas:

finance, e-commerce, strategy, supply chain management, entrepreneurship, or healthcare administration. Graduates receive masters level command of how to apply knowledge to solve problems in their area and how to adapt knowledge to develop solutions to new problems. These graduates are able to meet the challenges of a rapidly changing, technology-driven, global society in their specialized field

2. Objectives:

2.1 Develop basic knowledge of management: Students will develop a basic knowledge of management including accounting and statistics

2.2 Demonstrate knowledge specialization core concepts: Students will demonstrate knowledge of the core concepts in their area of specialization

2.3 Apply principles and techniques to solve probems: Students will be able to apply the principles and techniques to solve problems in the specialization

2.4 Adapt knowledge to changing environments: Students will be able to adapt the principles and techniques to develop new solutions in changing business environments

Ph.D. in International Management Studies

1. Mission Statement: The mission of the PhD Program in International Management Studies is to provide an interdisciplinary education in Organization Theory, Strategic Management, and International Business with an emphasis on International Management applications

2. Objectives:

2.1 Acquisition of Advanced Knowledge: The acquisition of advanced knowledge in areas of specialization

2.2 Prepare for Teaching Roles: Preparation for teaching responsibilities in higher education (for full time Ph.D. students only)

2.3 Contribute to a Field of Knowledge: Ability to integrate knowledge and make original intellectual contribution to a field of knowledge.

2.4 Apply Theories to Solve Problems: Ability to apply theories and techniques in OSIM area to solve research problems

Ph.D. in Management Science

1. Mission Statement: The mission of the PhD Program in Management Science is to provide management education with a Management Science focus that admits specialization in Accounting, Management Science and Information Systems, Finance, Marketing, and Operations Management.

2. Objectives:

2.1 Acquisition of Advanced Knowledge: The acquisition of advanced knowledge in areas of specialization

2.2 Prepare for Teaching Roles: Preparation for teaching responsibilities in higher education (for full time Ph.D. students only)

2.3 Contribute to a Field of Knowledge: Ability to integrate knowledge and make original intellectual contribution to a field of knowledge.

2.4 Apply Theories to Solve Problems: Ability to apply theories and techniques in OSIM area to solve research problems

Project Management Certificate

1. Mission Statement: To provide necessary knowledge and skills to those professionals in the field of project management who operate in a global market subject to constant technological advancement. Program graduates learn valuable Project Planning skills. Graduates become key contributors in a variety of Program Management roles in the business community.

2. Objectives:

2.1 Constructing Project Plans: Sutdents will demonstrate the ability to construct an effective project plan.

2.2 Team Leadership: Students will demonstrate the ability to lead a team and understand how organizations behave, including managing the people and organizational variables that can make or break a project.

2.3 Critical Thinking: Students will demonstrate strategic and critical thinking skills.

Supply Chain Management Certificate

1. Mission Statement: Supply Chain Management aims to promote university alliances with industry and government through education, research, and consultation, advance scientific and operational knowledge in intelligent supply networks for manufacturing and services management and to become the knowledge portal for the supply chain community. Graduates are prepared for additional responsibilities or promotion either with their current employer or another employer. Industries employing graduates include manufacturing, consulting, services or software.

2. Objectives:

2.1 Master Supply Chain Business Processes: Students will master the business processes and challenges involved in end-to-end supply chain management.

2.2 Master Supply Chain Design: Students will master the major processes, strategies and tools in designing a supply chain network.

2.3 Demonstrate Supply Chain Planning: Students will demonstrate the effective use of the major processes, strategies and tools available for performing supply chain planning.

2.4 Demonstrate Supply Chain Execution: Students will demonstrate the effective use of the major processes, strategies and tools available for performing supply chain execution.

2.5 Communicate Value Management: Students will communicate the financial and managerial value proposition for a supply chain management project

2.6 Demonstrate Effective Implementation: Students will demonstrate the best practice project management, change management and listening techniques needed for an effective supply chain management implementation.

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At UTD, our focus is on discovering new knowledge and creating new art that enriches civilization and significantly contributes to economic and social programs. Our university combines the nurturing environment of a liberal arts college with the intellectual rigor and depth of a major research university.

Program Missions & Objectives

B.A. in Biology

1. Mission Statement: The mission of the undergraduate Biology program is to provide students with a grounding in the unifying molecular and cellular nature of organisms. At the core of the Biology undergraduate curriculum are the biochemical, genetic, and cell biology concepts and tools used to study the genes of prokaryotes and eukaryotes, to study the proteins and ribonucleic acids encoded by these genes, and to study how the expression of these genes is regulated during the development and lifetimes of organisms. The goal of the B.A. degree in Biology is to provide a liberal arts background in modern biology with less emphasis on mathematics than that needed for the B.S. degree and more freedom to explore other disciplines. The B.A. degree program prepares students for professional studies in a wide variety of health-related areas (including medicine, dentistry, physician assistant, optometry, pharmacy, and veterinary medicine), for secondary school teaching, and for employment as research assistants in pharmaceutical, biotechnology, government, and environmental science laboratories.

2. Objectives:

2.1 Describe and analyze major concepts : Describe and analyze the major concepts and empirical findings in modern molecular and cell biology and anatomy and physiology.

2.2 Define and explain research methods: Define and explain basic modern biology research methods, including research design, data analysis, and interpretation.

2.3 Apply critical thinking skills : Respect and use critical and creative thinking, skeptical inquiry, and the scientific approach to analyze and solve problems.

2.4 Demonstrate effective communication: Demonstrate effective communication in specific contexts and formats.

2.5 Apply biological principles to solve problems: Apply biological principles and findings

to solve problems.

B.A. in Chemistry

1. Mission Statement: The B.A. in Chemistry builds on a base of chemistry, physics, and mathematics to provide the student the opportunity to develop essential theoretical and practical skills in the subdisciplines of organic, physical, inorganic, analytical, and biochemistry. The Chemistry program at U.T. Dallas is designed to instruct the student in how chemical experiments are performed, how results are interpreted, and through its integrated laboratory sequence, to emphasize the importance of one subdiscipline in solving problems inherent to another. Meeting these goals, the Chemistry program provides the student with the flexibility to enter industry, go on to graduate school, or pursue medical, dental, and other degrees in the health sciences. Compared to the B.S., the B.A. program offers the minimum fundamental knowledge required for adequate professional function in a career in chemistry. It is possible that students choosing this option may, through suitable use of unspecified hours, prepare for careers in areas as varied as chemistry-related businesses, government, medicine and dentistry, secondary school teaching, and even law or politics.

2. Objectives:

2.1 Fundamental Knowledge: Students will gain fundamental knowledge of foundation areas of chemistry. (ACS guidelines)

2.2 In-depth Knowledge: Students will gain in-depth knowledge of chemistry. (ACS guidelines)

2.3 Gain Math/Physics Knowledge: Students will gain knowledge of mathematics and physics. (ACS guidelines)

2.4 Develop Communication Skills: Students will develop oral and written communication skills. (ACS guidelines)

B.A. in Geosciences

1. Mission Statement: The BA degree is intended to assist in the preparation of undergraduate students for non-geoscience careers, where substantial Earth science knowledge is required. These careers might include science teaching and management of energy or natural resource related businesses. Students would also need to participate in other degree or certification programs to obtain well-rounded qualification.

2. Objectives:

2.1 Identify rocks & fossils: Identify & interpret rocks and fossils

2.2 Construct a geoscientific map: Construct a geoscientific map

2.3 Conduct a geoscientific survey: Conduct a geoscientific survey

**2.4 Interpret Earth`s history & processes:** Interpret the Earth`s origin, history, structure and processes

2.5 Apply Earth processes to global concerns: Apply Earth processes to global concerns

B.A. in Physics

1. Mission Statement: The mission of the B.A. degree in physics is to foster students' understanding of physical science while developing their abilities to think

scientifically. It is expected that students seeking the B. A. degree will use knowledge of physics as a background for graduate studies in fields such as biophysics, biotechnology, medicine, geophysics, aerospace, nano-scale technologies, and patent law.

2. Objectives:

2.1 Interpret behavior of energy and matter: Be able to explain natural phenomena occurring in the physical universe in the light of the behavior of energy and matter.

2.2 Apply science based techniques for problem solving: Be able to apply science based techniques for solving problems related to the physical world.

2.3 Discuss physical laws and theories: Be capable of articulating physical laws and theories logically and quantitatively to facilitate entrance into professional engagement.

2.4 Describe limitations of scientific hypotheses: Be capable of describing the limitations of measurements and tests of scientific theories and hypotheses.

B.S. in Biochemistry

1. Mission Statement: The B.S. Biochemistry degree program at U.T. Dallas, administered through the Department of Chemistry, draws on faculty from the Departments of Chemistry, Molecular and Cell Biology, and researchers from U.T. Southwestern Medical School to provide courses and research opportunities to its majors. The Biochemistry major bridges the gap between modern Chemistry and Biology. The curriculum, designed to prepared students for either graduate work in the Biological Sciences, the Chemical Sciences, or for entry-level positions in the biotechnology industry, builds on a base of biology, chemistry, physics, and mathematics to provide the student the opportunity to develop essential theoretical and practical skills.

2. Objectives:

2.1 Gain Fundamental Knowledge: Students will gain fundamental knowledge of foundation areas of chemistry, biology, and biochemistry. (ACS guidelines)

2.2 Gain In-Depth Knowledge: Students will gain in-depth knowledge of chemistry, biology, biochemistry, and research skills. (ACS guidelines)

2.3 Gain Knowledge of Math and Physics: Students will gain knowledge of mathematics and physics. (ACS guidelines)

2.4 Develop Oral and Written Communication Skills: Students will develop oral and written communication skills. (ACS guidelines)

B.S. in Biology

1. Mission Statement: The mission of the undergraduate Biology program is to provide students with a grounding in the unifying molecular and cellular nature of organisms. At the core of the Biology undergraduate curriculum are the biochemical, genetic, and cell biology concepts and tools used to study the genes of prokaryotes and eukaryotes, to study the proteins and ribonucleic acids encoded by these genes, and to study how the expression of these genes is regulated during the development and lifetimes of organisms. The goal of the B.S. degree in Biology is to provide preparation for scientific careers in biology or careers in the health professions.

2. Objectives:

2.1 Knowledge Base of Biology: Describe and analyze the major concepts and empirical findings in modern molecular and cell biology and anatomy and physiology.

2.2 Define and exbasic modern biology research methods: Define and explain basic modern biology research methods, including research design, data analysis, and interpretation.

2.3 Apply critical thinking skills to solve problems: Respect and use critical and creative thinking, skeptical inquiry, and the scientific approach to analyze and solve problems.

2.4 Demonstrate effective communication: Demonstrate effective communication in specific contexts and formats.

2.5 Apply biological principles to solve problems: Apply biological principles and findings to solve problems.

B.S. in Chemistry

1. Mission Statement: The B.S. in Chemistry builds on a base of chemistry, physics, and mathematics to provide the student the opportunity to develop essential theoretical and practical skills in the subdisciplines of organic, physical, inorganic, analytical, and biochemistry. The Chemistry program at U.T. Dallas is designed to instruct the student in how chemical experiments are performed, how results are interpreted, and through its integrated laboratory sequence, to emphasize the importance of one subdiscipline in solving problems inherent to another. Meeting these goals, the Chemistry program provides the student with the flexibility to enter industry, go on to graduate school, or pursue medical, dental, and other degrees in the health sciences. Compared to the B.A., the B.S. program provides more intensive training in chemistry for the student who intends either to obtain employment at the bachelor's level in the chemistry industry or to pursue graduate study.

2. Objectives:

2.1 Gain Fundamental Knowledge: Students will gain fundamental knowledge of foundation areas of chemistry. (ACS guidelines)

2.2 Gain In-Depth Knowledge: Students will gain in-depth knowledge of chemistry and research skills. (ACS guidelines)

2.3 Gain Knowledge of Math and Physics: Students will gain knowledge of mathematics and physics. (ACS guidelines)

2.4 Develop Oral and Written Communication Skills: Students will develop oral and written communication skills. (ACS guidelines)

B.S. in Geosciences

1. Mission Statement: The BS degree is intended to prepare undergraduate students for careers in geology, geochemistry or geophysics. Students obtain the knowledge, skills and experience required to obtain entry level employment in the energy, natural resources or environmental industries or to advance to a graduate degree program at UTD or elsewhere. A broad base of physics, chemistry and mathematics is the foundation of an Earth science degree. This program promotes a breadth of knowledge and experience in Earth science, while allowing specialization through undergraduate research.

2. Objectives:

2.1 Identify & interpret rocks and fossils: Identify & interpret rocks and fossils

2.2 Construct a geoscientific map: Construct a geoscientific map

2.3 Conduct a geoscientific survey: Conduct a geoscientific survey

**2.4 Interpret Earth`s history & processes:** Interpret the Earth`s origin, history, structure and processes

2.5 Apply Earth processes to global concerns: Apply Earth processes to global concerns

B.S. in Mathematical Sciences

1. Mission Statement: The mission of the undergraduate program in Mathematical Sciences is to provide students a strong background in the mathematics and its applications. The goal of the program is to prepare students for competitive positions in a variety of settings where their analytical, mathematical and modeling skills will be called upon, including teaching, and also to prepare them for continuation into a Mathematics graduate education program at leading graduate institutions.

2. Objectives:

2.1 Describe fundamental concepts in mathematics: Students are able to describe fundamental concepts and procedures in mathematics and their applications.

2.2 Apply formal mathematical arguments: Apply formal mathematical arguments in analysis, model creation, justification of computational procedures.

2.3 Develop knowledge of mathematical software: Through their required and guided elective courses, students develop experience in using MATLAB and/or other software packages to solve mathematical problems in other fields such as teacher development, Actuarial Science, or management.

B.S. in Mathematical Sciences - Applied Mathematics

1. Mission Statement: The mission of the undergraduate program in applied mathematics is to provide students a strong background in the mathematics of significance to applications. The applications covered range from physics, chemistry, biology to engineering, finance and business. The goal of the program is to prepare students for competitive positions in a variety of settings where their analytical, mathematical and modeling skills will be called upon, also to prepare them for continuation into an Applied Mathematics graduate education program at leading graduate institutions.

2. Objectives:

2.1 Describe fundamental concepts in mathematics: Students are able to describe fundamental concepts and procedures in mathematics and their applications

2.2 Apply formal mathematical arguments: Apply formal mathematical arguments in analysis, model creation, justification of computational procedures

2.3 Advanced technology in computation: Through their required and guided elective courses, students develop experience in using MATLAB and/or other software packages to solve mathematical problems appearing in engineering,

sciences and other fields.

B.S. in Mathematical Sciences - Statistics

1. Mission Statement: The mission of the undergraduate program in Mathematical Sciences - Statistics is to provide students with an introduction to statistical theory and methodology, ability to transform questions concerning populations into appropriate statistical methods applied to samples selected from those populations, implement the methods using statistical software, and interpret results of the analysis for non-statisticians. The goal of the program is to prepare students for positions in statistics, biostatistics, data analysis, and related fields in various branches of industry and business, or continuation of their Statistics education at leading graduate institutions.

2. Objectives:

2.1 Describe principles of statistical theory: Students are able to describe the main principles of probability and statistical theory and the mathematical foundation

2.2 Statistical methodology: Students are able to choose appropriate statistical procedures for data analysis, providing necessary diagnostics of data, evaluating the goodness-of-fit, and interpreting results

2.3 Applications of Statistics: Through their guided elective courses, students develop experience and background in application of Statistics to other fields such as Biostatistics, Actuarial Science, or Computer Science

B.S. in Molecular Biology

1. Mission Statement: The mission of the undergraduate Molecular Biology program is to provide students with grounding in the unifying molecular and cellular nature of organisms. At the core of the Molecular Biology undergraduate curriculum are the biochemical, biophysical, genetic, and cell biology concepts and tools used to study the genes of prokaryotes and eukaryotes, to study the proteins and ribonucleic acids encoded by these genes, and to study how the expression of these genes is regulated during the development and lifetimes of organisms. The goal of the B.S. degree in Molecular Biology is to provide preparation for scientific careers in molecular and cell biology or careers in the health professions. The Molecular Biology degree program specifically includes biophysics in the multidisciplinary core curriculum to provide the concepts and tools used to study biomolecular structure.

2. Objectives:

2.1 Describe major concepts and empirical findings: Describe and analyze the major concepts and empirical findings in modern molecular and cell biology and anatomy and physiology.

2.2 Define basic modern biology research methods: Define and explain basic modern biology research methods, including research design, data analysis, and interpretation.

2.3 Apply critical thinking skills to solve problems: Respect and use critical and creative thinking, skeptical inquiry, and the scientific approach to analyze and solve problems.

2.4 Demonstrate effective communication: Demonstrate effective communication in specific contexts and formats.

2.5 Apply biological principles to solve

problems: Apply biological principles and findings to solve problems..

B.S. in Physics

1. Mission Statement: The mission of the B.S. degree in physics is to allow students to learn the full range of basic classical and modern physics using a hands-on approach. Students in this program develop individual creativity and expertise in physics and scientific thinking. It is expected that students in the B.S. degree program generally will continue their studies in physics or closely related programs.

2. Objectives:

2.1 Intepret behavior of energy and matter: Be able to explain natural phenomena occurring in the physical universe in the light of the behavior of energy and matter.

2.2 Apply science based techniques for problem solving: Be able to demonstrate the ability to apply science based techniques for solving problems related to the physical world.

2.3 Discuss physical laws and theories: Be capable of articulating physical laws and theories logically and quantitatively to facilitate entrance into professional engagement or advanced studies.

2.4 Describe limitations of scientific hypotheses: Be capable of performing experiments to test laws and hypotheses and of describing the limitations of such measurements.

Graduate Certificate in Remote Sensing

1. Mission Statement: The mission of the Graduate Certificate in Remote Sensing is to provide students with a thorough grounding in the theories, concepts and skills needed in the field of Remote Sensing, the art, science, and technology of obtaining reliable information about physical objects and the environment through the process of recording, measuring and interpreting imagery and digital representation of energy patterns derived from non-contact sensor systems. UT-Dallas certificate recipients will have the skills necessary to successfully accomplish Remote Sensing projects and support Remote Sensing operations using industry standard software in a variety of areas in the government and non-government sectors such as geospatial intelligence, emergency management, environmental protection, natural resource exploration and management, and urban and regional planning.

2. Objectives:

2.1 Demonstrate RS theories & concepts: Students will demonstrate a thorough grounding in the theories and concepts needed to use Remote Sensing technologies effectively and correctly.

2.2 Demonstrate RS/GIS industry-standard software: Students will demonstrate the use of industry-standard Remote Sensing and GIS software products.

2.3 Develop in-depth background & skills: Students will develop the in-depth background and skills necessary to successfully accomplish Remote Sensing projects and support Remote Sensing operations in a variety of substantive areas in the public and private sectors.

M.A.T. in Mathematics Education

1. Mission Statement: The long term mission of

Science/Mathematics Education Department is to be and to produce leaders and practioners in science and mathematics education at institutional, local, state, national and international levels by highlighting best practices and providing opportunities for cutting-edge research in science, technology, engineering and mathematics (STEM) education to current and future STEM education professionals. We also see to support the University in the recruitment and retention of high quality students in STEM disciplines.

2. Objectives:

2.1 Research and Critical Thinking: Courses develop the independent research and critical thinking abilities of our students along with a familiarity with research-based developments in STEM teaching and learning and education reform efforts. Teachers will demonstrate an ability to critically think and independently conduct research in mathematics teaching and learning and education reform efforts.

2.2 Content/Pedagogical Content Knowledge:: Courses facilitate the development of preK-16 classroom teachers into skilled educators with a depth of content knowledge and pedagogical content knowledge in the sciences and/or mathematics through best practices in science and mathematics education reflective of cutting-edge research and national STEM education reform initiatives. 2.1. Teachers will demonstrate an ability to analyze and select the best practices and methods associated with problem based mathematics learning. 2.2. Teachers will obtain the depth of content knowledge of skilled educators in science and mathematics education reflective of cutting-edge research and national mathematics education reform initiatives

2.3 Universality of Knowledge: Courses enable the development of understanding of the connections between college-level content knowledge in mathematics and science and content at the pre-college level to ensure the deep subject level knowledge required of successful teachers. Teachers will demonstrate an ability to connect the content of their high school level mathematics with the content of college level mathematics courses

2.4 Technology Application: Courses allow for the familiarization, application and assessment of educational technology for use in teaching and learning. Teachers will demonstrate proficiency with educational technology for use in teaching and learning.

M.A.T. in Science Education

1. Mission Statement: The long term mission of Science/Mathematics Education Department is to be and to produce leaders and practitioners in science and mathematics education at institutional, local, state, national and international levels by highlighting best practices and providing opportunities for cutting-edge research in science, technology, engineering and mathematics (STEM) education to current and future STEM education professionals. We also see to support the University in the recruitment and retention of high quality students in STEM disciplines.

2. Objectives:

2.1 Research and Critical Thinking: Courses develop the independent research and critical thinking abilities of our students along with a familiarity with research-based developments in STEM teaching and learning and education reform efforts. Teachers will demonstrate an ability to critically think and independently conduct research

in science teaching and learning and education reform efforts.

2.2 Content/Pedagogical Content Knowledge: Courses facilitate the development of preK-16 classroom teachers into skilled educators with a depth of content knowledge and pedagogical content knowledge in the sciences and/or mathematics through best practices in science and mathematics education reflective of cutting-edge research and national STEM education reform initiatives. 2.1. Teachers will demonstrate an ability to analyze and select the best practices and methods associated with problem based science learning. 2.2. Teachers will obtain the depth of content knowledge of skilled educators in science and mathematics education reflective of cutting-edge research and national science education reform initiatives.

2.3 Universality of Knowledge: Courses enable the development of understanding of the connections between college-level content knowledge in mathematics and science and content at the pre-college level to ensure the deep subject level knowledge required of successful teachers. Teachers will demonstrate an ability to connect the content of their high school level science with the content of college level science courses.

2.4 Technology Application: Courses allow for the familiarization, application and assessment of educational technology for use in teaching and learning. Teachers will demonstrate proficiency with educational technology for use in teaching and learning.

M.S. in Applied Physics

1. Mission Statement: The mission of the MSAP program is to allow professionals with technical and science backgrounds to become familiar and able to use physics principles as applied to state-of-the art technologies. In pursuit of this objective, study in the program is strongly focused on course work and practical laboratory experience to prepare students for careers in government, laboratories, or industry.

2. Objectives:

2.1 Apply Technical Knowledge and Skills: Be able to demonstrate the technical knowledge and skills that will allow the students to contribute to industry and society.

2.2 Apply Knowledge: Be able to demonstrate the ability to apply basic physical knowledge to compete in the development of innovative technology. Be able to compose an article about ongoing research within physics beyond the typical undergraduate level.

2.3 Articulate Physical Phenomena: Be able to demonstrate a quantitative understanding of physical phenomena.

M.S. in Bioinformatics and Computational Biology

1. Mission Statement: The mission of our Bioinformatics and Computational Biology program is to provide students a strong background in mathematics, biology and computer sciences needed in bioinformatics and computational biology, enabling students to choose appropriate and optimal interdisciplinary techniques of analysis (from mathematics, statistics and biology) in biomedical problems, and apply popular computational tools to solve a wide range of biomedical problems. The

goal of the program is to prepare students in competitive positions in bioinformatics, computationa biology, and related fields in various branches of biotechnology, pharmacedutical industries, or continuation of their education at a doctoral level.

2. Objectives:

2.1 Knowledge Base of Biology, Computer Sciences and Mathematics and Statistics: Demonstrate a broad knowledge and of biology, computation, mathematical techniques, and principles of statistical data analysis.

2.2 Bioinformatics and Computational Biology Methodologies: Enable students to choose appropriate and optimal interdisciplinary techniques of analysis for biomedical problems and able to explain the main features of specific computational and mathematical methods commonly applied in bioinformatics and computational biology.

2.3 Implementation and application of popular computational tools to solve a wide range of biomedical problems: Apply commonly available bioinformatics software such as BLAST, FASTA to analyze wide range of problems in bioscience research and use mathematical software such as Matlab, Mathematica, Maple ,etc, for biological data analysis, obtain and interpret results, and prepare a report.

M.S. in Biology - Molecular and Cell Biology

1. Mission Statement: The mission of the Biology - Molecular and Cell Biology M.S. degree program is to educate students in the methodology of research in molecular and cell biology and the fundamentals of problem solving in these areas. The degree program emphasizes education and training in the molecular events that define and characterize all life forms.

2. Objectives:

2.1 Advance Knowledge Base of Biology: Apply the major concepts to problems in modern molecular and cell biology; evaluate current methods to solve current problems.

2.2 Research Methods in Biology: Apply modern mollecular biology research methods, including design of experiments, analysis of data, and evaluation of data

2.3 Critical Thinking in Biology: Analyze and evaluate current developments in the field of molecular and cellular biology

2.4 Communication Skills in Biology: Students in the thesis option program will demonstrate effective communication in writing their research.

M.S. in Biotechnology

1. Mission Statement: The mission of the Biology - Biotechnology M.S. degree program is to educate students in the methodology of existing and emerging biotechnology enterprises and the fundamentals of problem solving in these areas. The degree program emphasizes flexibility in degree planning in order to optimize each individual's education and training.

2. Objectives:

2.1 Knowledge Base of Biotechnology: Describe the major concepts in biotechnology-related fields and how they are applied to solve problems in biotechnology.

2.2 Research Methods in Biotechnology: Apply

modern biotechnology research methods, including analysis of data, and evaluation of data.

2.3 Critical thinking: Analyze and evaluate current developments in biotechnology-related fields

2.4 Communication Skills in Biotechnology: Communication Skills in Biotechnology (for thesis students): Demonstrate effective communication in specific contexts and formats

M.S. in Chemistry

1. Mission Statement: The M.S. degree program in chemistry is designed to produce graduates with an in-depth background in chemistry, research, and communication skills. These students are well prepared for positions in industry, or for further education in chemically related fields.

2. Objectives:

2.1 Gain Fundamental Knowledge: Students will gain fundamental knowledge of core areas of chemistry.

2.2 Develop Oral and Written Communication Skills: Students will develop oral and written communication skills.

2.3 Learn Strategic Research Skills: Students will learn strategic research skills.

2.4 Contribute New Knowledge: Students will contribute new knowledge to the field of chemistry through guided research.

M.S. in Geosciences

1. Mission Statement: The MS degree with the thesis option is a well-recognized qualification for industrial employment. Students in this program have already obtained qualifications equivalent to the BS degree at UTD. In addition to obtaining knowledge, skills and experience in a specialized area of geology, hydrology, geochemistry or geophysics, students will learn and demonstrate the combination of research, management and communication skills necessary to conceive, promote, execute and document a substantial research project.

The non-thesis MS degree track is more narrowly defined to promote the attainment of broad knowledge and skills applicable in the environmental geology field. These skills include hydrology, geochemistry, geophysics and geographical information science. Communication and project execution is emphasized through a number of topical projects as opposed to the large effort project encompassed by the thesis option MS degree.

2. Objectives:

2.1 Solve a scientific problem: Demonstrate the ability to solve a geoscientific problem

2.2 Illustrate scientific communication skills: Illustrate scientific communication skills

**2.3 Interpret Earth`s history & processes:** Interpret the Earth`s origin, history, structure and processes

2.4 Apply Earth processes to global concerns: Apply Earth processes to global concerns

2.5 Demonstrate technical expertise: Demonstrate technical expertise

2.6 Assess the scientific literature: Assess the scientific literature

M.S. in Mathematical Sciences

1. Mission Statement: The mission of the Masters program in Mathematics is to provide students a strong background in the mathematics and its applications. The goal of the program is to prepare students for competitive positions in a variety of settings where their analytical, mathematical and modeling skills will be called upon, including teaching, and also to prepare them for continuation into a doctoral program should they desire to further their education.

2. Objectives:

2.1 Knowledge base of Mathematics: Demonstrate a broad knowledge and background in real & functional analysis, complex variables, differential equations, algebra, topology and geometry.

2.2 Numerics: Analyze the theory behind numerical procedures and implement them using standard scientific software such as C ++, Matlab, or Mathematica.

2.3 Applications: Develop experiences and background in the modeling and analysis of mathematical problems arising in a variety of fields.

M.S. in Mathematical Sciences - Applied Mathematics

1. Mission Statement: The mission of the Masters program in Applied Mathematics is to provide students a strong background in the mathematics of significance to applications. The applications covered range from physics, chemistry, biology to engineering, finance and business. The goal of the program is to prepare students for competitive positions in a variety of settings where their analytical, mathematical and modeling skills will be called upon, and also to prepare them for continuation into a doctoral program should they desire to further their education.

2. Objectives:

2.1 Knowledge base of Applied Mathematics: Demonstrate a broad knowledge and background in analysis, complex variables, differential equations, and modern applied mathematics

2.2 Numerics: Analyze the theory behind numerical procedures and implement them using standard scientific software such as C ++, Matlab, or Mathematica.

2.3 Applications Areas: Develop experiences and background in the modeling and analysis of mathematical problems arising in a variety of fields.

M.S. in Mathematical Sciences - Engineering Mathematics

1. Mission Statement: The mission of the Masters program in Engineering Mathematics is to provide students a strong background in the mathematics of significance to engineering, especially electrical engineering and computer science. The goal of the program is to prepare students for competitive positions in a variety of settings where their analytical, mathematical and modeling skills will be called upon, and also to prepare them for continuation into a doctoral program should they desire to further their education.

2. Objectives:

2.1 Knowledge base of Engineering Mathematics: Demonstrate a broad knowledge and background in analysis, complex variables,

differential equations, and modern applied mathematics

2.2 Numerics: Analyze the theory behind numerical procedures and implement them using standard scientific software such as C ++, Matlab, or Mathematica.

2.3 Applications Areas: Develop experiences and background in the modeling and analysis of mathematical problems arising in a variety of fields, especially in the areas of electrical engineering and computer science

M.S. in Mathematical Sciences - Statistics

1. Mission Statement: The mission of the Masters program in Statistics is to provide students with strong knowledge of statistical theory and methodology, ability to choose appropriate and optimal methods of analyzing data, implement them using popular statistical software, and interpret results of data analysis. The goal of the program is to prepare students for competitive positions in statistics, biostatistics, quantitative analysis, data analyst and related fields in various branches of industry and business, college teaching, consulting or continuation of their Statistics education at a doctoral level.

2. Objectives:

2.1 Fundamental theory of Statistics: Students are able to apply the main principles of statistical data analysis, design optimal statistical procedures, and evaluate their performance

2.2 Statistical methodology: Students are able to select appropriate statistical procedures for data analysis, provide necessary diagnostics of data, evaluate the goodness-of-fit, and interpret the results

2.3 Implementation of statistical procedures : Students are able to use sound statistical techniques and modern popular software (R, SAS, Matlab) to analyze real data sets, obtain and interpret results, and prepare a report.

M.S. in Physics

1. Mission Statement: The mission of the Master of Science Program in Physics is to facilitate students' individual creativity and expertise in the physics. In pursuit of this objective, study in the program is strongly focused on developing students' depth of understanding with the opportunity to apply this to research projects.

2. Objectives:

2.1 Articulate broad quantitative understanding: Be able to express and articulate a broad quantitative understanding of physical phenomena

2.2 Write and explain ongoing research within physics: Be able to compose and write about and explain ongoing research within physics beyond the typical undergraduate level

2.3 Quantitative understanding of physical phenomena: Be able to demonstrate a quantitative understanding of physical phenomena.

Ph.D. in Biology - Molecular and Cell Biology

1. Mission Statement: The mission of the Biology - Molecular and Cell Biology Ph.D. degree program is to educate students in the methodology of research in molecular and cell biology and the fundamentals of

problem solving in these areas. The degree program emphasizes education and training in the molecular events that define and characterize all life forms. In the case of the Ph.D. degree, emphasis is placed on becoming independent and critical in the planning, interpretation, and analysis of original experiments in the larger context of the field of molecular and cell biology.

2. Objectives:

2.1 Knowledge Base of Biology: : Evaluate the knowledge base in molecular and cell biology

2.2 Research Methods in Biology: Compare and contrast modern biology research methods, including design of experiments, analysis of data, and evaluation of data

2.3 Critical Thinking in Biology: Analyze and evaluate current developments in the field of molecular and cellular biology.

2.4 Ability to Communicate in Molecular and Cell Biology: Show effective communication in specific contexts and formats - research discussions, journals clubs, qualifying exams, and thesis defense - in order to analyze and evaluate current literature and research.

2.5 Original Research in Biology: Perform original research to create new information.

Ph.D. in Chemistry

1. Mission Statement: The Ph.D. program is designed to produce graduates with a focus on innovation and problem solving in chemistry. These graduates, with their broad course background, research and communication skills, and practical attitudes, are well prepared to make independent and creative contributions in industry or academia.

2. Objectives:

2.1 Gain Fundamental Knowledge: Students will gain fundamental knowledge of core areas of chemistry.

2.2 Develop Oral and Written Communication Skills: Students will develop oral and written communication skills.

2.3 Gain Advanced Knowledge: Students will gain advanced knowledge of chemistry and learn strategic research skills.

2.4 Demonstrate Contributions to Chemistry: Students will demonstrate creative and independent contributions to chemistry.

2.5 Contribute New Knowledge: Students will contribute new knowledge to the field of chemistry.

Ph.D. in Geosciences

1. Mission Statement: The PhD degree is intended to provide the experience required for exceptional students, who have already obtained qualifications equivalent to the BS or MS degree at UTD, to move into positions where leadership and innovation are highly valued. Graduates may pursue careers in academia, industry or government. Knowledge and experience in a specialized area of geology, hydrology, geochemistry or geophysics is obtained and substantial work in additional sub-fields is encouraged. Students will learn and demonstrate the combination of research, management and communication skills necessary to conceive, promote, execute and document an innovative multifaceted, and extended research project. A premium is placed on the communication of this research through publication.

2. Objectives:

2.1 Independently solve a geoscientific problem: Ability to independently solve a geoscientific problem

2.2 Innovative research project: Conceive and complete an innovative research project

**2.3 Interpret Earth`s history & processes:** Interpret the Earth`s origin, history, structure and processes

2.4 Apply Earth processes to global concerns: Apply Earth processes to global concerns

2.5 Demonstrate technical expertise: Demonstrate technical expertise

2.6 Assess the scientific literature: Assess the scientific literature

Ph.D. in Mathematical Sciences - Applied Mathematics

1. Mission Statement: The mission of the doctoral program in Applied Mathematics is to provide students a strong background in mathematics and its applications, the ability to conduct independent research in the mathematical underpinnings of problems arising in science, engineering and medicine. The goal of the program is to prepare students for competitive position in research oriented positions in academia and industry, and help them develop their expository skills with a view towards college and university research and teaching.

2. Objectives:

2.1 Solid theoretical background: Develop solid understanding of the mathematical foundations and acquire broad knowledge in analysis, complex variables, differential equations, and modern applied mathematics necessary for conducting independent research projects.

2.2 Advanced mathematical applications and implementat: Describe and analyze the theory behind numerical procedures and implement them using standard scientific software (C ++, Matlab, Mathematica) in modelling and analysis of mathematical problems arising in a variety of fields.

2.3 Doctoral dissertation research: Conduct innovative research of publishable quality in applied mathematics

Ph.D. in Mathematical Sciences - Statistics

1. Mission Statement: The mission of the Doctoral program in Statistics is to provide students with strong knowledge of broad statistical theory and advanced methodology, ability to conduct independent research in theoretical and applied areas of Statistics, derive efficient methods of data analysis, design case studies, implement solid statistical techniques using popular statistical software, and interpret results. The goal of the program is to prepare students for competitive research-oriented positions in statistics, biostatistics, quantitative analysis, and related fields in various branches of industry and business, college and university teaching, and statistical consulting.

2. Objectives:

2.1 Solid theoretical background: Develop solid understanding mathematical foundations and advanced theory of Probability and Statistics, deriving and evaluating efficient statistical techniques based on general principles, acquiring broad knowledge of statistical procedures necessary to consult and conduct independent

research projects

2.2 Advanced statistical methodology : Choosing appropriate parametric and nonparametric methods of data analysis, evaluating and comparing statistical techniques, using modern statistical software (R, SAS, Matlab) to implement the chosen and derived procedures, provide diagnostics, fit models, evaluate goodness-of-fit, and interpreting results.

2.3 Doctoral dissertation research: Conducting innovative research of publishable quality covering theoretical and/or applied aspects of modern Statistical Science.

Ph.D. in Physics

1. Mission Statement: The mission of the Doctoral Program in Physics is to develop individual creativity and expertise in the fields of physics. In pursuit of this objective, study in the program is strongly focused on research. Students are encouraged to begin participating in ongoing research activities from the beginning of their graduate studies. The research experience culminates with the doctoral dissertation, the essential element of the Ph.D. program that prepares the student for careers in academia, government laboratories, or industry.

2. Objectives:

2.1 Formulate New Ideas: Be able to formulate new ideas, investigate new research directions, and extend the frontiers of knowledge in their area of specializations that are offered by this Ph.D. program such as Astrophysics, Cosmology and Relativity, Atmospheric And Space Physics, High Energy Physics And Elementary Particles, and Solid State/Condensed Matter Physics/Materials Science, and other topics agreed upon by a faculty committee. The student`s dissertation will contribute to the advancement in the field of specialization.

2.2 Communication Skills: Be able to communicate scientific ideas effectively to the scientific community up to the level of specialists in the field.

2.3 Writing ability: Be able to write publishable, quality articles for the appropriate American Institute of Physics journals or equivalent.

2.4 Articulate broad quantitative understanding: Be able to articulate a broad quantitative understanding of physical phenomena up to the level of a specialist.

Updated: August 20, 2007