Texas A&M University-Texarkana

ED 486 (NTCC): Teaching Methods for Early Childhood through Grade 6 (EC-6) in Health, Math, Physical Education and Science
Spring 2016

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Course Description: A Project-Based course that engages students in the planning, delivery and assessment of state standards using *High-Impact Practices* for Health, Math, Physical Education and Science for Grades EC-6. Course content aligns with Texas Educator Content Standards for EC-6 and student standards including content standards for EC-6, College and Career Readiness Standards and English Language Proficiencies. This course emphasizes Science standards that integrate Math, Health and Physical Education standards. Prerequisite: Admission to the Teacher Preparation Program.

Required Textbooks/Resources: Teaching Science Through Inquiry and Investigation, Terry L. Contant, *Sam Houston State University* Joel E. Bass, *late of Sam Houston State University*Arthur A. Carin, *late of Queens College of City University of New York* ISBN-10: 0133400794 • ISBN-13: 9780133400793©2015 • Pearson

TK20 Access:

Students seeking teacher certification are required to subscribe to TK20. The TK20 subscription is a one-time only, non-refundable fee of $100. You may purchase the program directly online or from the bookstore. Please note prices may be higher at the bookstore although purchasing through the bookstore will allow you to get requisite compensation from financial aid if you are eligible. Whether you pay online or through the bookstore, you register for access at: https://tamut.tk20.com (lower left).

The TK20 system allows you to:
1. Complete applications for Teacher Preparation Program and forms for Intent To Do Field Experience.
2. Build artifacts of your work electronically which will be accessible for years, even after graduation.
3. Create your Teacher Preparation Portfolio throughout your program; due your last semester of student teaching or internship.
4. Receive timely feedback and have a fully documented record of your field experience work.
5. Design and create electronic professional portfolios which you may share with prospective employers.

Tk20 Professional Portfolio: Requirements and Access (for those seeking teacher certification)

TPP Portfolio:
As prospective education professionals, all students in the Teacher Preparation Program (TPP) are required to submit a portfolio in their last semester documenting their growth throughout the program. In preparation for this requirement, students should keep electronic copies of all coursework completed throughout the program (e.g. papers, discussion posts, etc.). It is recommended that students organize their work, "artifacts", in electronic folders assigned for each of their education courses (ED, SPED, RDG, ITED). The instructor of this course will identify specific

evaluated artifacts that students enrolled in this course will be expected to submit for their TPP Portfolio. Specific portfolio expectations are outlined in TPP Handbook: http://tamut.edu/Academics/CELA/Academic-Programs/Teacher%20Preparation%20Program%20Undergraduate/handbooks.html

Course Outcomes:

Overall, course outcomes include three components: 1) Content Outcomes, 2) Professionalism/Ethical Outcomes, and 3) Technology Outcomes. Content Outcomes include University Student Learning Outcomes (SLOs) and Texas Education Agency Educator Content Standards and are aligned with the State of Texas Educator Standards for Health, Math, Physical Education and Science in Grades EC-6 as outlined below. During the first class, students will receive, as documented by student signature, full copies of each of standards to include specific competencies. In addition, students will receive copies of Texas Essential Knowledge and Skills (TEKS) Standards, College and Career Readiness Skills and English Language Proficiencies addressed in this course (http://www.tea.state.tx.us/index2.aspx?id=2147499973) as documented by student signature.

I.   **Content Outcomes: Outcomes related to student knowledge and skills obtained in course.**

1.   **University Student Learning Outcomes: By the end of this course, students will:**

- Demonstrate knowledge of state educational and instructional standards in Health, Math, Physical Education and Science EC-6 and apply to Lesson Plans, Unit Plans and Projects.
- Critically analyze and apply major approaches and materials for teaching Health, Math, Physical Education and Science EC-6 through reflective activities and responses.
- Demonstrate ability to respond to elementary students in a scientifically and mathematically competent manner facilitating scientific and mathematical skills through Lesson Plans, Unit Plans and Projects.
- Apply theory of *constructivism* to instruction using innovative strategies (e.g. Flipped Classroom).
- Implement evidence-based instructional activities and strategies meeting state standards.
- Plan and develop inquiry-based lessons and Project Based Learning (PBL) that integrate standards from Health, Math, Physical Education and Science EC-6.

2.   **Texas Education Agency Educator Content Standards: By the end of the course, students will show evidence of knowledge and skills in the following:**

Texas Education Agency: SCIENCE GENERALIST EC-6 STANDARDS:
http://www.tea.state.tx.us/index2.aspx?id=6066&menu_id=2147483671&menu_id2=794
Standard I. The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.
Standard II. The science teacher understands the correct use of tools, materials, equipment, and technologies.
Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.
Standard IV. The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.
Standard V. The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.
Standard XI. The science teacher knows unifying concepts and processes that are common to all sciences.

Texas Education Agency: MATH GENERALIST EC-6 STANDARDS:
http://www.tea.state.tx.us/index2.aspx?id=6066&menu_id=2147483671&menu_id2=794
Standard VII. The mathematics teacher understands how children learn and develop mathematical skills, procedures and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals, and to teach all students to understand and use mathematics.
Standard VIII. The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on an ongoing basis to monitor and guide instruction and to evaluate and report student progress.

Standard IX. The mathematics teacher understands mathematics teaching as a profession, knows the value and rewards of being a reflective practitioner, and realizes the importance of making a lifelong commitment to professional growth and development.

Texas Education Agency: HEALTH GENERALIST EC-6 STANDARDS:
http://www.tea.state.tx.us/index2.aspx?id=6066&menu_id=2147483671&menu_id2=794
Standard I. The health teacher applies knowledge of both the relationship between health and behavior and the factors influencing health and health behavior.
Standard II. The health teacher communicates concepts and purposes of health education.
Standard III. The health teacher plans and implements effective school health instruction and integrates instruction with other content areas.
Standard IV. The health teacher evaluates the effects of school health instruction.

Texas Education Agency: PHYSICAL EDUCATION GENERALIST EC-6 STANDARDS:
http://www.tea.state.tx.us/index2.aspx?id=6066&menu_id=2147483671&menu_id2=794
Standard I. The PE teacher demonstrates competency in a variety of movement skills and helps students develop these skills.
Standard II. The PE teacher understands principles and benefits of a healthy, physically active lifestyle and motivates students to participate in activities that promote this lifestyle.
Standard III. The PE teacher uses knowledge of individual and group motivation and behavior to create aand manage a safe, productive learning environment and promotes students' self-management, self-motivation, and social skills through participation in physical activities.
Standard IV. The PE teacher uses knowledge of how students learn and develop to provide opportunities that support students' physical, cognitive, social, and emotional development.
Standard V. The PE teacher provides equitable and appropriate instruction for all students in a diverse society.
Standard VI. The PE teacher uses effective, developmentally appropriate instructional strategies and communication techniques to prepare physically educated individuals.
Standard VII. The PE teacher understands and uses formal and informal assessment to promote students' physical, cognitive, social, and emotional development in physical education contexts.
Standard VIII. The PE teacher is a reflective practitioner who evaluates the effects of his/her actions on others (e.g. students, parent/caregivers, other professionals in the learning environment) and seeks opportunities to grow professionally.
Standard IX. The PE teacher collaborates with colleagues, parents/careagivers, and community agencies to support students' growth and well-being.
Standard X. The PE teacher understands the legal issues and responsibilities of physical education teachers in relation to supervision, planning and instruction, matching participants, safety, first aid, and risk management.

II.   Student Learner Professionalism/Ethical Outcomes

As future educators, students are expected to meet professional/ethical outcomes that meet TEA Code of Ethics and TPP Professional Expectations as located in the Teacher Preparation Program Student Handbook located at:

http://tamut.edu/Academics/CELA/Academic-Programs/Teacher%20Preparation%20Program%20Undergraduate/handbooks.html

III.   Technology Outcomes

The following 'Technology Outcomes' are infused into the learning opportunities throughout the course. Students do not need to be an expert in technology but are expected to develop the following skills meeting ISTE Standards for Educators http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf :

1. *Facilitate and inspire student learning and creativity*
2. *Design and develop digital age learning experiences and assessments*
3. *Model digital age work and learning*
4. *Promote and model digital citizenship and responsibility*
5. *Engage in professional growth and leadership*

Google Drive, Youtube and TK20 Account Access:

Students seeking teacher certification are required to subscribe to TK20 for electronic portfolio maintenance upon admittance into the Teacher Preparation Program. Until admitted, students seeking teacher certification must post written artifacts on1) Google Drive (for portfolio maintenance) through their ACE email account and 2) Blackboard, at instructor discretion (for course grading). Video artifacts should be posted on a Youtube account opened by student. Student is responsible for sharing artifact access with instructor.

Course Outline

1. What do I have to know about Math, Science, Physical Education and Health to teach EC-6?
   - Investigation of state standards
     - Content
     - Process

2. Differences between Pedagogy and Content Pedagogy
   - Knowledge construction in content areas with emphasis on Math and Science
   - English- Language Proficiencies and Content Knowledge Construction
   - Content Relevance with emphasis on Math and Science (Problem-Based Learning)
   - Error Analysis in Content Areas

3. Instructional Strategies
   - What is Project-Based Learning?
   - Constructivism and Project-Based Learning
   - Integrating Standards for Deeper Learning
   - Researched Strategies with emphasis on Math
   - Using Technology/Flipped Classrooms
   - Effective questioning

4. Assessment
   - Formal
   - Informal

5. Facilitating Instruction
   - Inquiry Based Instruction
     a. 5-E Model
     b. Teacher/self-Reflection

Course Requirements

1. *Attend all class sessions and actively participate.*

2. Demonstrate knowledge of the course **Content Outcomes.**
3. Demonstrate knowledge of **Professional/Ethical Outcomes**.
4. Demonstrate emerging skills towards the **Technology Outcomes.**
5. Complete all **Examinations and assignments.**

Methods of Evaluation

Each student will be evaluated on three levels including 1) mastery of course outcomes and 2) professional/ethical outcomes and 3) technology outcomes. Points earned based on the quality of the product as designed on the grading rubric for each learning opportunity. Point totals may be adjusted at instructor discretion.

Grade Components of Course	Totals
Level 1: Mastery of Course Outcomes	
Chapter Quizzes 10 x 20	200
Group 5-E Science Lesson and reflection	150
Exams • Mid-semester • Semester	300
Math Lesson Plan	150
Level 2: Professional and Ethical Outcomes	
Participation Etiquette	50
Generalist Notebook	100
Level 3: Technology Outcomes	
Video Artifacts (total of 3)* • math lesson and self-reflection	150

*Artifacts to be submitted to TPP Portfolio for Program Review

Level 1 – Mastery of Course Outcomes

Unit Assignments, TExES Quizzes, Reflective Activities, Notebook Checks: Course instructor will schedule assignments, quizzes, reflective activities and notebook checks in a manner that best meets the specific needs of the class and course outcomes. Artifacts are due by the specific deadline announced in class or stated on course calendar!

- The professor retains the right to modify these deadlines as deemed necessary. Changes will be announced via email or posted on the course website; therefore all students are expected to meet those deadline changes.
- It will be the discretion of the instructor if late work is accepted.

Level 2 – Mastery of Professional/Ethical Outcomes

1. **Professionalism:** Active class participation by students is critical to the overall success of the class and its individual students. All students are expected to take responsibility for their membership in the class and be active and willing participants including the following:

   a. **Student Attendance**

Students are expected to attend all face-to-face or virtual classes, to be on time, and attend for the full class. THERE ARE NO EXCUSED ABSENCES nor does the professor "give permission to miss class". Missing more than two face-to-face or virtual classes will result in the student grade dropped one full letter. Missing more than three classes will result in student grade dropped two full letters.

If a student chooses to miss a class, the student is responsible for
- o course announcements
- o covering the material addressed in class independently
- o obtaining notes from a peer

b. Professional Etiquette

Profession Etiquette is an important component meeting professional/ethical outcomes for TEA Code of Ethics and TPP Professional Expectations. Etiquette expected for this course includes:
- Appropriate attendance and promptness
- Positive, open attitude towards learning
- Appropriate collaboration skills with peers
- Appropriate grammar, articulation and speech patterns
- Conduct yourself in a manner that is not distracting to your peers. This includes cell phone use.
- Be respectful of other students and the professor.
- Recognize that arriving late or leaving class early is a distraction to your peers!
- Students are responsible for reading, understanding, and following the A&M-Texarkana Code of Conduct.

2. **Generalist Notebook:** Throughout ED 486 and ED 487, teacher candidates will be required to keep a notebook of all course materials organized by Content Areas required for EC-6 Generalist TExES. The purpose of this notebook is to support student efforts in content comprehension and in taking the EC-6 Generalist TExES exam. Notebook rubric will be provided by instructor at beginning of semester.

Level 3 – Technology Outcomes

Video of lesson presentation and Critique: In the semester, student will be required to video two lessons digitally. In addition, student will be required to critique their video and the videos of two peers, as assigned.

Grading Scale

Final course grade will be an average of the points earned. Course grade will be assigned based on the following scale:

950 - 1,100 points = A
800 - 950 points = B
750 - 800 points = C
600 - 750 points = D
0 - 600 points = F
See University Specific Information for policy regarding Assigning an Incomplete Grade

**The instructor reserves the right to make changes to assignments, the class schedule or the syllabus if the need arises.

Teacher Preparation Program (TPP) Coursework Resources

I.TPP Professional/Ethical Outcomes
As future educators, students are evaluated on professional/ethical outcomes that meet TEA Code of Ethics and TPP Professional Expectations. TEA Code of Ethics is located at:
http://www.tea.state.tx.us/index2.aspx?id=2147501244&menu_id=771&menu_id2=794 . Professionalism Expectations are located

TPP Handbook: http://tamut.edu/Academics/CELA/Academic-Programs/Teacher%20Preparation%20Program%20Undergraduate/handbooks.html

II.TPP Portfolio:
As prospective education professionals, all students in the Teacher Preparation Program (TPP) are required to submit a portfolio in their last semester documenting their growth throughout the program. In preparation for this requirement, students should keep electronic copies of all coursework completed throughout the program (e.g. papers, discussion posts, etc.). It is recommended that students organize their work, "artifacts", in electronic folders assigned for each of their education courses (ED, SPED, RDG, ITED). The instructor of this course will identify specific evaluated artifacts that students enrolled in this course will be expected to submit for their TPP Portfolio. Specific portfolio expectations are outlined in TPP Handbook: http://tamut.edu/Academics/CELA/Academic-Programs/Teacher%20Preparation%20Program%20Undergraduate/handbooks.html

III. TPP Training Meeting Senate Bill 460 and 866 (Statements adapted for course, as appropriate):
This course meets SB 460 (Effective Sept. 1, 2013) providing minimal introductory training in the *education of students at risk for suicide or with other mental or emotional disorders and the inclusion of mental health concerns in coordinated school health efforts.*

This course meets SB 866 (Effective Sept. 1, 2012) providing training on *effective multisensory strategies for teaching students with dyslexia*.

IV. TPP Assessment Requirements (Following to be updated Fall 2014 to align with new TEA Educator Standards):
This course meets 1) Texas Education Agency (TEA) Content Topics, 2) Texas A&M System Student Learning Outcomes, and 3) InTASC Core Standards. Specific course alignment is presented in the TPP Assessment document located on TPP Website:
http://tamut.edu/Academics/CELA/Academic-Programs/Teacher%20Preparation%20Program%20Undergraduate/Faculty.html

V: State Instructional Standards
TPP coursework prepares students to teach content standards in the area seeking certification. These standards include the following: Texas Essential Knowledge and Skills (TEKS), College and Career Readiness Skills (CCRS), Prekindergarten Guidelines and English Language Proficiencies: http://www.tea.state.tx.us/curriculum/teks/ .

VI: TExES Standards
TPP coursework meets TExES Teacher Standards including 1) Pedagogy and Professional Responsibility and 2) Content Pedagogy and Content Knowledge. Additionally, EC-6 candidates are prepared to meet standards for English as a Second Language – ESL (EC-12) and Special Education (EC-12). TEA Standards for specific certifications can be located at
http://www.tea.state.tx.us/index2.aspx?id=5938&menu_id=2147483671&menu_id2=794.

VII: English Language Learner Standards
All TPP coursework prepares future educators to teach students from culturally and linguistically diverse backgrounds. This course reinforces instruction based on the following TEA Standards for teaching English Language Learners:
http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html#74.4

VIII: Technology Standards
All TPP coursework prepares future educators to utilize technology in the classroom in meaningful ways per ISTE Standards. This course reinforces instruction based on the following TEA Technology Standards for Beginning Teachers:
http://www.tea.state.tx.us/index2.aspx?id=5938&menu_id=2147483671&menu_id2=794

IX: STAAR Standards
TPP coursework prepares future educators to instruct to meet TEA state assessment standards. This course reinforces instruction based on the following STAAR standards: http://www.tea.state.tx.us/student.assessment/staar/.

TAC Content Standards Addressed:
228.30

(2) the code of ethics and standard practices for Texas educators, pursuant to Chapter 247 of this title (relating to Educators' Code of Ethics);

(3) the skills and competencies captured in the Texas teacher standards, as indicated in Chapter 149 of this title (relating to Commissioner's Rules Concerning Educator Standards), which include:

   (A) instructional planning and delivery;
   (B) knowledge of students and student learning;
   (C) content knowledge and expertise;
   (D) learning environment;
   (E) data-driven practice; and
   (F) professional practices and responsibilities

University Policies

I.   **Disability Accommodations:** Students with disabilities may request reasonable accommodations through the A&M-Texarkana Disability Services Office by calling 903-223-3062.

II.   **Academic Integrity:** Academic honesty is expected of students enrolled in this course. Cheating on examinations, unauthorized collaboration, falsification of research data, plagiarism, and undocumented use of materials from any source constitute academic dishonesty and may be grounds for a grade of 'F' in the course and/or disciplinary actions. For additional information, see the university catalog.

III. **A&M-Texarkana Email Address:** Upon application to Texas A&M University-Texarkana an individual will be assigned an A&M-Texarkana email account. This email account will be used to deliver official university correspondence. Each individual is responsible for information sent and received via the university email account and is expected to check the official A&M-Texarkana email account on a frequent and consistent basis. Faculty and students are required to utilize the university email account when communicating about coursework.

IV.   **Drop Policy:** Students who no longer wish to attend their course(s) will be required to submit the necessary paperwork to the Registrar's Office in order to be officially dropped/withdrawn from their course(s). Those student who do not follow the correct drop/withdraw procedure will remain registered in their course(s) and receive the grade issued by the instructor. Students may find the drop/withdraw form on the "Dropping/Withdraw a Class" page of the Registrar website.

V.   **Class Participation:** Students are responsible for beginning their participation on the FIRST CLASS DAY by logging on and completing assignments according to the COURSE CALENDAR. Failure to submit online assignments between the first day of classes and the University census date (according to the University schedule) will result in an ADMINISTRATIVE DROP from the course.

VI. **Student Technical Assistance:**

- Solutions to common problems and FAQ's for your web-enhanced and web courses are found at this link: http://www.tamut.edu/Training/Student%20Training/index.html
- If you cannot find your resolution there, you can send in a support request detailing your specific problem here: http://www.tamut.edu/techde/support.htm
- Blackboard Helpdesk contacts (office hours are: Monday - Friday, 8:00a to 5:00p)
  Julia Allen (main contact) 903-223-3154 julia.allen@tamut.edu
  Nikki Thomson (alternate) 903-223-3083 nikki.thomson@tamut.edu
  Jayson Ferguson (alternate) 903-223-3105 jayson.ferguson@tamut.edu

VII. **Technical Requirements:**

Minimum Windows PC Requirements:

- Pentium IV 1.5GHz+ (preferred: Core Duo)
- 1 GB RAM minimum (preferred: 2 GB)
- 128MB Video Card minimum - Sound Card is required for some courses
- 56K modem minimum (Cable or DSL required for some courses)

- Windows 2000, XP, Vista or 7
- Web browser (Internet Explorer 7.0+; Firefox 3.0+)
- Microsoft Word, minimum Office 97
  Some courses will need plug-ins such as Flash player 10 +, QuickTime player 7.0+, Adobe Reader 9.0+, Java Runtime Environment (Java 1.6.0_15), Windows Media Player 10+, RealPlayer, and Macromedia/Adobe Shockwave.

  Some online courses may also require a CD ROM (8x minimum, higher recommended)
  Blackboard has certified the following browsers for computers running Windows Operating Systems:

- Internet Explorer 8 or 9 (IE is not supported on Windows XP)
- Mozilla Firefox 3.6+
- Google Chrome

Minimum Apple Macintosh Requirements:

- Intel Core 2.0GHz+
- 1 GB RAM (preferred: 2 GB)
- 128MB Video Card minimum - Sound Card is required for some courses
- 56K modem minimum (Cable or DSL required for some courses)
- Web browser (Firefox 3.0+ ; Safari 3.0+)
- Microsoft Word, minimum Office 97

  Some courses will need plug-ins such as Flash player 10+, QuickTime player 7.0+, Adobe Reader 9.0+, Java Runtime Environment, RealPlayer, and Macromedia/Adobe Shockwave.

  Some online courses may also require a CD ROM (8x minimum, higher recommended)
  Blackboard has certified the following browsers for computers running Macintosh Operating Systems:

- Mac OS 10.2 (Jaguar): (Safari 1 is compatible)
- Mac OS 10.3 (Panther): Safari 1.2 (Firefox 1.5 is compatible)
- Mac OS 10.4 (Tiger): Safari 2 and Firefox 1.5
- Mac OS 10.5 (Leopard): (Firefox 2.0 is compatible)

I-OS and Android Devices
These devices are currently supported using the Blackboard Mobile App, available for free from your App Store or scan the code below:
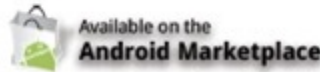
To access Texas A&M University - Texarkana, there is an individual license fee of $1.99 per year or $5.99 lifetime. This fee gives you access to the university from all your (same platform) devices; it is not necessary to pay the fee for each device you own.