College of Education Undergraduate Course Change Proposal
Signature Page

Course Title: Teaching Senior High School Mathematics
Course Prefix and Number: MAE 4330
Type of Change: SUBSTANTIVE
Name of Faculty Sponsor: Rick Austin
Email: austin@usf.edu

APPROVALS
List appropriate Department Chair, Committee Chair, Faculty Council Chair and Associate Dean

Approving: Dr. Stephen Thornton
Department Chair
Signature 1/28/10

Name of UPC Chair
SIGNATURE
DATE

Bill Young
College Council Chair
SIGNATURE
DATE

Michael Stewart, Ph.D.
Name of Associate Dean
SIGNATURE
DATE

CONCURRENCE
List other units and department of the University that have been consulted, comments and supporting remarks:

UNIT
CHOOSE ONE: CONCURRENCE, NON-CONCURRENCE or DEFER RECOMMENDATION

Name/Title
Signature
Date

UNIT
CHOOSE ONE: CONCURRENCE, NON-CONCURRENCE or DEFER RECOMMENDATION

Name/Title
Signature
Date

UNIT
CHOOSE ONE: CONCURRENCE, NON-CONCURRENCE or DEFER RECOMMENDATION

Name/Title
Signature
Date

UNIT
CHOOSE ONE: CONCURRENCE, NON-CONCURRENCE or DEFER RECOMMENDATION

Name/Title
Signature
Date

COUNCIL/DEAN APPROVALS
Recommendation of Undergraduate Council: Approved: _____ Disapproved: _____
Signature of Undergraduate Council Chair: ___________________________ Date__________
Action by the Undergraduate School Dean: Approved: _____ Disapproved: _____
Signature of Undergraduate Dean: ___________________________ Date__________
Effective Date (Term): _____________________________
College of Education
UNDERGRADUATE COURSE CHANGE PROPOSAL

PLEASE INDICATE THE TYPE OF CHANGE YOU ARE REQUESTING TO MAKE:

SUBSTANTIVE  Change in course syllabus
NON-SUBSTANTIVE

1. DEPARTMENT AND CONTACT INFORMATION

Department  Secondary Education  
College:  Education
Budget account number:  172400 Secondary Education
Faculty Contact Name  Rick Austin  
Phone:  
E-mail:  austin@usf.edu

2. CURRENT COURSE INFORMATION

Prefix:  MAE  
Number:  4330

Full Course Title:
Teaching Senior High School Mathematics

Abbreviated Course Title: (not to exceed 30 characters)
Tch Sr. High Math

The course title is variable?  
☐ Yes  ☐ No

Is a permit required for registration?  
☐ Yes  ☐ No

Are the credit hours variable?  
☐ Yes  ☐ No

Credit hours (list max if variable):  3  
Total Clock Hours:  45

Section Type:  Class Lecture (Primarily)  
Grading option:  Regular

Prerequisites
Admission to Mathematics Education Program or CI
Corequisites
Co-Prerequisites
Course Description (not to exceed 255 characters including spaces)

The course is designed to prepare the student for a successful internship experience as well as an induction to teaching mathematics in the high schools of today. The experiences help bridge the perceived gap between theory and practice.

Please indicate in the description if the course:
* is restricted to majors or non-majors
* is repeatable for credit and, if so, for how many total credits

3. **New Course Information** (leave unchanged fields blank):

   New Prefix: [ ]  New Number: [ ]

   New Full Course Title: [ ]

   New Abbreviated Course Title: (not to exceed 30 characters) [ ]

   The course title is variable?  ○ Yes  ○ No

   Is a permit required for registration?  ○ Yes  ○ No

   Are the credit hours variable?  ○ Yes  ○ No

   New Credit hours (list max if variable): [ ]  New Total Clock Hours: [ ]

   New Section Type: [ ]  New Grading option: [ ]

   New Prerequisites

   MAE 4320 or Cl

   New Corequisites

   [ ]

   New Co-Prerequisites

   [ ]
New Course Description (not to exceed 255 characters including spaces)

Please indicate in the description if the course:
* is restricted to majors or nonmajors
* is repeatable for credit and, if so, for how many total credits

4. JUSTIFICATION:

a. Nature of change(s): Be specific. (Indicate the nature of all changes, i.e., change of objectives, course level, etc. State the reasons why the change is necessary and how it will improve the course or program.) A structural analysis of the course should be included. Indicate where this course is in relation to other courses in the program. How will the change impact the enrollment of the course? Does this change affect accreditation or certification?

We are changing the prerequisites to insure that the topics from MAE 4320 have been covered prior to taking this course. This will help to avoid repetition of topics and also help students plan for their program of study. This course is offered each spring semester. The plan is that those students who take MAE 4320 in the fall would then take this class in the spring after they have been admitted into the mathematics education major.

The previous objective concerning classroom management has been dropped.

This minor change should have no impact on either accreditation or on certification.

(Items “4.b.” – “4.f.” are ONLY for Substantive Course Changes)

b. Indicate how this course will strengthen the Undergraduate Program.

This course has always been a part of the undergraduate program in mathematics education. The changes provide a bit more structure for students to plan their programs, and avoid some duplication of efforts that have occurred in the past.
c. What specific area of knowledge is covered by this change that is not covered by courses currently listed?

This is the program course that deals directly with planning lessons, objectives and assessing student work as a part of a unit of study. It is also where the general issues of curriculum and instruction are first presented. The mathematics topics that serve as the focus for the teaching are from high school curriculum.

d. What is the need or demand for this course? (Here you must indicate if this course is part of a required sequence in the major.) What other programs would use this course?

This course is located in about the middle of the mathematics education major set of courses prior to the internship. The course is required of all mathematics education majors. The class is taught each spring semester. The class enrollment the last two years has been 34 and 33 students respectively.

e. What qualifications and/or experience are necessary to teach this course?

At least a masters degree and 18 hours in mathematics education. Former teaching at a high school level as well as PhD degree are preferred.

f. What will be the effect of this change on the program and on the students? Do you plan to drop a course of this change is made?

No course will be dropped. The change to students will be that they will need to structure their plan of study to begin with MAE 4320 and then take this class the following spring. For students admitted in the spring or summer, they will need to take general core education courses and mathematics courses until the fall semester, rather than taking the math education courses out of sequence (as is now possible).
5. **OTHER COURSE INFORMATION** – Required for submission to the Statewide Course Numbering System *(You must complete this section with the requested items. “n/a” or “unchanged,” etc. is not acceptable) If this section is not filled out, the course change will NOT be made!*

**a. Course Objectives/Student Learning Outcomes**

As a competent mathematics intern teacher you must accept the challenge to effectively teach all students assigned to your classes. As a result of your active participation in this class you will be able to:

1. Explain how a school’s mathematics curriculum plan fits the overall view of curriculum and how it aligns with national, state and local standards;
2. Plan for teaching a mathematics course on a long range (year), medium range (unit), and short range (lesson) basis.
3. Assess student progress and assign grades to students in a fair manner;
4. Identify and implement effective instructional strategies that are appropriate for a given task;
5. Incorporate problem solving;
6. Work with students of various mathematical abilities, increasing their skills and improving their attitudes towards mathematics and its usefulness in daily life;

**b. Major Course Topics**

- Teaching in a High School: An Overview
- Professional Responsibilities
- Ethical Behavior
- Leadership Structures
- Professional Development Opportunities
- Learning Theories and Curriculum
- A review of competing theories of learning as applied to mathematics
- Overall views of curriculum

**c. Course Textbooks**

A current High School Methods Text such as current editions of these examples

- Beckmann, Thompson and Rubenstein. Teaching and Learning High School Mathematics.
- Posamentier and Stepelman. Teaching Secondary School Mathematics
- Brumbaugh and Rock. Teaching Secondary Mathematics

Selected readings from The Mathematics Teacher (NCTM Journal In the Library)

6. **Gordon Rule/General Education**

This course is certified for:

- Not a part of Gordon Rule nor General Education

7. **Syllabus** – If this is a substantive course change you MUST attach a copy of the syllabus.
1. **Course Prefix and Number:** MAE 4330

2. **Course Title:** Teaching Senior High School Mathematics

3. **Regular Instructor(s):**
   - Dr. Rick Austin
   - Dr. Denisse Thompson
   - Dr. Helen Gerretson
   - Dr. Eugenia Vomvoridi-Ivanovic
   - Dr. Gladis Kersaint

4. **Course Prerequisites (if any):** MAE 4320 or CI

5. **Course Description:**
The course is designed to prepare students for a successful internship experience as well as an induction to teaching mathematics in high school. The experiences help bridge the perceived gap between theory and practice.

6. **Course Goals and Objectives:**
   - As a competent mathematics intern teacher you must accept the challenge to effectively teach all students assigned to your classes. As a result of your active participation in this class you will be able to:
   1. Explain how a school’s mathematics curriculum plan fits the overall view of curriculum and how it aligns with national, state and local standards;
   2. Plan for teaching a mathematics course on a long range (year), medium range (unit), and short range (lesson) basis.
   3. Assess student progress and assign grades to students in a fair manner;
   4. Identify and implement effective instructional strategies that are appropriate for a given task;
   5. Incorporate problem solving;
   6. Work with students of various mathematical abilities, increasing their skills and improving their attitudes towards mathematics and its usefulness in daily life;
   7. Explain a professional teacher’s varying relationships with administrators, parents, students and other teachers;
   8. Explain a teacher’s responsibilities for professional growth and development;
   9. Initiate an ongoing effort to collect materials for classroom use that; promote problem solving, reflect the contributions of people from diverse backgrounds to the field of mathematics, and provide for appropriate uses of technology - especially graphing calculators and computers.

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10. Relate actual, observed classroom life to information covered in other university courses about teaching.

7. **Content Outline:**

Teaching in a High School: An Overview
- Professional Responsibilities
- Ethical Behavior
- Leadership Structures
- Professional Development Opportunities

Learning Theories and Curriculum
- A review of competing theories of learning as applied to mathematics
- Overall views of curriculum
- The establishment of mathematics curriculum

Knowledge of Mathematics
- The need of the Teacher to have a solid background in Mathematics
- Competency testing

Assessment Issues

Lesson Planning
- Long Range Planning – (whole course)
- Unit Planning – (a couple of weeks)
- Detailed Daily Lesson Plans - (daily)

Instructional Models
- Questioning Skills
- Inductive and deductive models
- Presenting mathematics lessons
- Appropriate uses of technology in teaching lessons

Problem solving issues

Proofs

Classroom Organizations

8. **Evaluation of Student Outcomes:**

All students will develop a written, detailed Unit Plan (AP# 1 and 10)
All Students will complete an assignment dealing with equity and diversity (AP #5)
All Students will complete at least 20 hours in a high school field experience, keep a log of the visits, and respond to detailed prompts provided by the instructor (AP# 2, 3 and 11)
All students must pass a competency test covering high school algebra and geometry (AP# 8)
All students must complete a peer teaching exercise (AP# 2 and 4)
All students will complete the on-line dispositions survey

Students will complete all supplementary exercises assigned
All students will pass a written midterm and/or final examination
All Students must become active participants in classroom activities and exercises

Assignments with Accomplished Practice (AP) numbers identified must be successfully completed and documented in the Chalk and Wire system in accordance with the policies of the Secondary Education Department.
Additional assignments may include, but are not limited to:

- Problem solving portfolio
- Article critiques
- Written reflections of class activities
- Written chapter overviews
- Pupil Study
- Textbook reviews
- Additional peer teaching exercises
- Write up of tutoring activities
- Tests and/or quizzes

9. **Grading Criteria:**

Students must achieve a passing score on the high school competency mathematics test, complete their minimum of 20 hours of field experience, and related reflective writing, and successfully achieve a minimum score of adequate on all Chalk and Wire core assignments in order to earn a passing grade the course.

**Percent of final grade ranges:**
- Activity file shall count from 15% - 20%
- Final or Midterm examination shall count from 20% - 30%
- Required and Selected additional activities shall count from 50% - 65%

10. **Textbook(s) and Readings:**

A current High School Methods Text such as current editions of these examples

Posamentier and Stepelman. *Teaching Secondary School Mathematics*
Brumbaugh and Rock *Teaching Secondary Mathematics*

Selected readings from *The Mathematics Teacher* (NCTM Journal in the Library)

11 (a) **ADA Statement:** Students with disabilities are responsible for registering with the Office of Student Disabilities Services in order to receive special accommodations and services. Please notify the instructor during the first week of classes if a reasonable accommodation for a disability is needed for this course. A letter from the USF Disability Services Office must accompany this request.

11(b). **USF Policy on Religious Observances:**
Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second class meeting.

11(c). **A Reminder:**
In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Blackboard, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor Blackboard site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.

11 **Please complete Attachment I (for College of Education files).**

Complete Attachment I, including the matrix by listing the (1) course objectives, (2) related topics, (3) evidence of achievement (including performance-based assessments, as appropriate) to be used to ensure that students have acquired the objectives, and identify the correlated Accomplished Practices (Attachment II), if applicable.

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COLLEGE OF EDUCATION

DEPARTMENTAL COURSE SYLLABUS

ATTACHMENT I

Please respond to each of the following questions and complete the attached Matrix:

1. **Rationale for Setting Goals and Objectives:** What sources of information (e.g., research, best practices) support the formulation and selection of course goals and objectives.

   The National Council of Teachers of Mathematics (NCTM) publication, *Principles and Standards for School Mathematics* (2000), continues to be a guiding influence on this program. The Florida Department of Education's *Education Standards Commission Subject Matter Standards*, are reflected in the mathematics selected for use as examples in this class.

2. List the specific competencies addressed from the relevant national guidelines.

   From the NCTM Guidelines:

   2.1 Programs prepare prospective teachers who can identify, teach, and model problem solving in grades 7 – 12
   2.2 Programs prepare prospective teachers who use a variety of physical and visual materials for exploration and development of mathematical concepts in grades 7 – 12.
   2.3 Programs prepare prospective teachers who use a variety of print and electronic resources.
   2.4 Programs prepare prospective 7 – 12 teachers who know when and how to use student groupings such as collaborative groups, cooperative learning, and peer teaching.
   2.5 Programs prepare prospective teachers who use instructional strategies based on current research and national, state and local standards relating to mathematics instruction.
   2.7 Programs introduce and involve prospective teachers in the professional community of mathematics educators.
   3.1 Programs provide prospective teachers with a field experience prior to student teaching.

   Of course in the State of Florida our secondary programs are considered to be grades 6 12.

3. Are there field-based experiences in this course? If so, please briefly indicate nature and duration.

   Yes.

   Field-based experiences are required in this course through the *Field-based Participant Observation* Assignment. Students must conduct at least 20, 50-minute observations in one/two middle school classrooms during the semester. This component provides secondary education students to become more familiar with the "everyday life" of the middle school teacher and adolescent, and aspects of the "middle school philosophy." As they learn various approaches and techniques in the course, they apply them to the classroom setting to the extent possible (with the permission of the cooperating teacher.) Students perform as many different activities as possible, including: (a) interacting with students and participating in their mathematics activities to understand just how they "give meaning to" and "make sense of" the mathematics; (b) aiding the classroom teacher in evaluating assignments (homework, tests, class work, projects); (c) tutoring

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an individual or a small group of students; (d) reviewing homework/class work with the students; (e) teaching a lesson; and, (f) conducting an activity using the calculator or doing an enrichment activity using a game or some manipulative with the class. At the end of the semester, students are required to submit a full Field-based Participant Observation Report including a Visitation Log (signed by cooperating teacher(s); Daily Journal Notes (daily personal reflections on the observed class and activities conducted with the students); and a Final Report (summary reflecting thoughts on the entire field-based experience, including benefits, concerns about teaching in the high school).

4. Is technology used in this course? If so, please briefly indicate type of technology and how it is used to manage, evaluate and improve instruction. Are students provided opportunities to access and/or demonstrate use of technology in instruction in this course? If so, please briefly describe. (See Accomplished Practice #12)

Calculator and computer technology is used in the course as appropriate. Specifically, fraction and graphing calculators are used as part of the activities supporting a number of the main course topics (e.g., number sense & computations). Students have access to calculators throughout the course and are allowed to use them during discussions, assignments, and examinations.

5. List the specific competencies addressed from the Florida Adopted Subject Area Competencies, if applicable.

Although not taught specifically, the competency exam and most examples used reflect the high school topics listed in the Florida Adopted Subject Area Competencies for Strands 1. (Number Sense, Concepts and Operations), 3. (Geometry), 4 (Algebraic Thinking) and 5. (Probability, Statistics and Data Analysis).

6. Are there any components of the course designed to prepare teacher candidates to help K-12 students achieve the Sunshine State Standards? If so, please identify.

Yes, the sole purpose of the course is to prepare qualified mathematics teachers. As such, these teacher candidates will be directly preparing high school students to achieve the mathematics related Next Generation Sunshine State Standards.

(Continued)
7. Complete the following matrix showing the association among (1) course objectives (item #6 of syllabus), (2) related topics, (3) evidence of achievement of objectives (including performance-based assessments, as appropriate), and (4) Accomplished Practices (Undergraduate and Plan II Master's Programs).

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>Topics</th>
<th>Evidence of Achievement</th>
<th>Predominant Accomplished Practices*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0</strong> Explain how a school's mathematics curriculum plan fits the overall view of curriculum and how it aligns with national, state and local standards;</td>
<td>1.1 Teaching in a High School Planning</td>
<td>Unit Plan Participation in class activities</td>
<td>#10 Planning</td>
</tr>
<tr>
<td><strong>2.0</strong> Plan for teaching a mathematics course on a long range (year), medium range (unit), and short range (lesson) basis.</td>
<td>2.1 Planning</td>
<td>Unit plan Exam(s)</td>
<td>#10 Planning #8 Knowledge of Subject Matter</td>
</tr>
<tr>
<td><strong>3.0</strong> Assess student progress and assign grades to students in a fair manner;</td>
<td>3.1 Assessment</td>
<td>Class activities Unit plan Exam(s)</td>
<td>#1 Assessment</td>
</tr>
<tr>
<td><strong>4.0</strong> Identify and implement effective instructional strategies that are appropriate for a given task;</td>
<td>4.1 Classroom Organization Presenting mathematics lessons</td>
<td>Class activities Exam(s) Peer Teaching</td>
<td>#9 Learning Environments #2 Communication</td>
</tr>
</tbody>
</table>

* (For Undergraduate and Plan II Masters Courses Only)
<table>
<thead>
<tr>
<th>5.0</th>
<th>Incorporate problem solving;</th>
<th>5.1</th>
<th>Instructional Models</th>
<th>Class activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exam(s)</td>
<td>Problem-Solving Portfolio</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class Discussions</td>
<td>#4 Critical Thinking</td>
</tr>
<tr>
<td>6.0</td>
<td>Work with students of various mathematical abilities, increasing their skills and improving their attitudes towards mathematics and its usefulness in daily life</td>
<td>6.1</td>
<td>Teaching in a High School</td>
<td>Class Activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exam(s)</td>
<td>#5 Diversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class Discussions</td>
<td>#9 Learning Environments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class Activities</td>
<td>#7 Human Development and Learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exam(s)</td>
<td>#2 Communication</td>
</tr>
<tr>
<td>7.0</td>
<td>Explain a professional teacher's varying relationships with administrators, parents, students and other teachers;</td>
<td>7.1</td>
<td>Teaching in a High School</td>
<td>#11 Role of a Teacher</td>
</tr>
<tr>
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<td></td>
<td>Class Discussions</td>
<td>#6 Ethics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class Activities</td>
<td>#3 Continuous Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Exam(s)</td>
<td>#5 Diversity</td>
</tr>
<tr>
<td>8.0</td>
<td>Explain a teacher's responsibilities for professional growth and development;</td>
<td>8.1</td>
<td>Teaching in a High School</td>
<td>#9 Learning Environments</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Class Discussions</td>
<td>#8 Knowledge of Subject Matter</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Class Activities</td>
<td>#5 Diversity</td>
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<td>9.0</td>
<td>Initiate an ongoing effort to collect materials for classroom use that; promote problem solving, reflect the contributions of people from diverse backgrounds to the field of mathematics, and provide for appropriate uses of technology - especially graphing calculators and computers.</td>
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<td>Instructional Models</td>
<td>#8 Knowledge of Subject Matter</td>
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<td></td>
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<td>#5 Diversity</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Class Activities</td>
<td>#9 Learning Environments</td>
</tr>
<tr>
<td>10.0</td>
<td>Relate actual, observed classroom life to information covered in other university courses about teaching.</td>
<td>10.1</td>
<td>Everything</td>
<td>Field Experience Activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class Activity</td>
<td>#8 Knowledge of Subject Matter</td>
</tr>
</tbody>
</table>

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Note: Examples of Indicators for the Accomplished Practices can be found in J:\Proposals Course-Program\Faculty Resource Packet for Accomplished Practices.
ATTACHMENT II

Departmental Course Syllabus

Preprofessional Benchmarks for the Accomplished Practices

Practice #1 — Assessment: The preprofessional teacher collects and uses data gathered from a variety of sources. These sources will include both traditional and alternate assessment strategies. Furthermore, the teacher can identify and match the student=s instructional plan with their cognitive, social, linguistic, cultural, emotional, and physical needs.

Practice #2 — Communication: The preprofessional teacher recognizes the need for effective communication in the classroom and is in the process of acquiring techniques which she/he will use in the classroom.

Practice #3 — Continuous Improvement: The preprofessional teacher realizes that she/he is in the initial stages of a life-long learning process and that self reflection is one of the key components of that process. While her/his concentration is, of necessity, inward and personal, the role of colleagues and school-based improvement activities increase as time passes. The teacher=s continued professional improvement is characterized by self reflection, work with immediate colleagues and teammates, and meeting the goals of a personal professional development plan.

Practice #4 — Critical Thinking: The preprofessional teacher is acquiring performance assessment techniques and strategies that measure higher order thinking skills in students and is building a repertoire of realistic projects and problem solving activities designed to assist all students in demonstrating their ability to think creatively.

Practice #5 — Diversity: The preprofessional teacher establishes a comfortable environment which accepts and fosters diversity. The teacher must demonstrate knowledge and awareness of varied cultures and linguistic backgrounds. The teacher creates a climate of openness, inquiry, and support by practicing strategies [such] as acceptance, tolerance, resolution, and mediation.

Practice #6 — Ethics: The preprofessional teacher adheres to the Code of Ethics and Principles of Professional Conduct of the Education Profession in Florida.

Practice #7 — Human Development and Learning: Drawing upon well established human development/learning theories and concepts and a variety of information about students, the preprofessional teacher plans instructional activities.

Practice #8 — Knowledge of Subject Matter: The preprofessional teacher has a basic understanding of the subject matter and is beginning to understand that the subject is linked to other disciplines and can be applied to real world integrated settings. The teacher=s repertoire of teaching skills include a variety of means to assist student acquisition of new knowledge and skills using that knowledge.

Practice #9 — Learning Environments: The preprofessional teacher understands the importance of setting up effective learning environments and has techniques and strategies to use to do so including some that provide opportunities for student input into the processes. The teacher understands that she/he will need a variety of techniques and is working to increase knowledge and skills.

Practice #10 — Planning: The preprofessional teacher recognizes the importance of setting high expectations for all students. The preprofessional teacher works with other professionals to design learning experiences that meet students= needs and interests. The teacher candidate continually seeks
advice/information from appropriate resources including feedback, interprets the information, and modifies her/his plans appropriately. Planned instruction will incorporate a creative environment and utilize varied and motivational strategies and multiple resources for providing comprehensible instruction for all students. Upon reflection, the teacher continuously refines outcome assessment and learning experiences.

**Practice #11 -- Role of the Teacher:** The preprofessional teacher communicates and works cooperatively with families and colleagues to improve the educational experiences at the school.

**Practice #12 -- Technology:** The preprofessional teacher uses technology as available at the school site and as appropriate to the learner. She/he provides students with opportunities to actively use technology and facilitates access to the use of electronic resources. The teacher also uses technology to manage, evaluate, and improve instruction.