NOTE: This syllabus is online as “Version 1.0”. It is subject to change as class experiences and other events inform and indicate the need for such changes. Any changes, of course, will be announced in class prior to their taking effect. However, it behooves you, the student, to check for new versions regularly and note such changes.

Instructor: Richard Johnston
Office: A103 / Office Hours: Mondays 3-4:00pm; Tuesdays 6-7pm; Wednesdays 3-4:00pm or by appointment.

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Class Meetings: Mondays 4:30-7:10pm;

Textbooks/Materials: (required)
2. Transparency film, both “write-on” and “inkjet print on”, and a set of transparency marker pens.

Course Description: Covers curricula, current issues, and research literature, and developing different styles of teaching in secondary school mathematics. A 15-hour field experience is required.

Course Content: This course is the further exploration of the curriculum and methods of teaching for all students in grades 6-12 that was begun in the prerequisite course EDCI572. Using the expectations and suggestions of the NCTM Standards and the INTASC Standards as guides, this methods course has an emphasis on lesson planning, writing objectives, developing questions and questioning techniques, planning and implementing cooperative learning activities, developing supplemental problem-sets consistent with the NCTM standards, improving direct instruction techniques, and other teaching strategies.

Course Format: The course will be conducted much like a series of professional development workshops. The workshop-oriented experiences include hands-on activities, small and large group discussions (both in-class and online), demonstrations, and case study analyses. With an emphasis on teaching for understanding, students may also work with physical manipulatives, virtual manipulatives, and technologies (when available) to
explore mathematics, and problem-solving techniques.

**Course Requirements:** This mathematics methods course is fashioned after, and similar in tone and purpose to, in-service professional development. As such, the course requirements are met by regular (on-time) class attendance, active participation in discussions and activities, and timely completion of assignments. Further details may be found below and on the course website at [http://BlackBoard.gmu.edu](http://BlackBoard.gmu.edu). The field experience requires the student to keep a chronicle of observations.

1. Participation - This class requires active and thoughtful preparation and involvement in activities and discussions in class and online. For this course to have professional meaning, everyone must participate. For each of us to gain global and ethical perspectives we must listen to each other and generate ideas collectively. Good attendance and being an active participant will lead to increased learning. You are responsible for getting assignments in on-time and catching up if you are absent.

Since this is a professional development course, high quality work (i.e., “A” work) is expected on all assignments and in class participation. **All work is required to be completed to successfully complete the course.** Attendance at all classes, for the entire class period, is a course expectation. Attendance at each class meeting is required, and absence will affect your grade. Being on time is essential and lateness will affect your grade. Late assignments will affect your grade. (Note that your absence for 1 class is equivalent to one of your secondary school students missing 13 days in a school year; 2 classes => 26 days; 3classes=>39 days; 4classes=>52 days).

Since this is a professional development course, high quality work (i.e., “A” work) is expected on all assignments and in class participation. **All work is required to be completed to successfully complete the course.** Attendance at all classes, for the entire class period, is a course expectation. Attendance at each class meeting is required, and absence will affect the grade. Being on time is essential and lateness will affect the grade. Late assignments will affect the grade.

Missing the equivalent of two class sessions will have a significant impact on your overall course grade [Anyone missing the equivalent of two class sessions must see the instructor to discuss dropping the course].

2. Lesson Plans & Mini-Lessons - At least 4 lesson plans, will be submitted for grades and feedback. A portion of, or all of, the lesson plans will be presented in class, with class members role playing students and critiquing each other lesson presentations and plans. Each plan must follow the outline and requirements posted online which is derived from the GSE Student Teacher/Intern Manual. Critiquing guidelines will also be found online.

(a) Focus on secondary students with appropriate recommendations for your students':
- cognitive needs and abilities
• affective (emotional/social) needs and abilities
• peer and family influences

(b) Include technology, and diversity as part of the plan’s:
• learning objectives & quotes from content SOLs
• teaching strategies/methods & quotes from the INTASC standards
• activities & resources/materials
• assessment & grading criteria

(c) In addition:
• demonstrate aptitude across disciplines with at least one other content area.

These lesson plan criteria may be modified as class experience indicates and other criteria may be added as well.

3. Case Analyses** - The case analyses serve as a means for you to demonstrate your understanding of the intersection of learning theory with pedagogical issues. Cases allow you to examine multiple perspectives on problems students experience in their schooling. Case studies give you a chance to practice the approaches a thoughtful and ethically principled teacher would use to solve these problems. In case analyses we always hold the teacher responsible for students' success. If students are not doing well, it is the teacher's task to figure out the mismatch between the teaching and learning that may be preventing the student(s) from being successful. This way of thinking will become second nature, so that when faced with problems in your own class you will think, “What might I do differently to help this student be successful?” A case analysis includes:

a) A **problem statement** (1-2 paragraphs) that describes what you think the teacher's responsibility is in the case -- that is, how the teacher contributes to the problem; what role the teacher is playing in the case that is (potentially) putting his/her students at risk, etc. You will demonstrate that you understand the learning theories we are reading about by adding **direct quotes** from readings to support your perspective on the problem.

b) An **action plan** - After discussion, in class or on-line, you will write a brief action plan (1-2 pages) for the teacher. This 'action plan' must be directly linked to your problem statement (which was designed to solve the problem) and be based upon specific approaches the authors of our readings feel will help the student(s) most in the long term. Also, you are encouraged to cite relevant experiences you’ve had in a classroom, either teaching or in field observations. You may use either direct or indirect quotes in the action plan.

Case analyses, which include the problem statement, written before group discussion, and action plan, written after group discussion, are due prior to the next class meeting**.

**Case analyses cannot be accepted late.

4. Journals: You are required to complete a 15 hour field experience and to practice reflection by keeping a journal.
POSTNOTE: It is recommended that you retain copies of all course products to document your progress through the Secondary Education Program. Products from this class (lesson plans, a case analysis, or a field experience chronicle) should be included in your exit portfolio for the M.Ed. program and can also become part of your professional portfolio used for job placement.

OTHER READINGS
In addition to the Required Textbook listed above:

INTASC Standards site:
Interstate New Teacher Assessment And Support Consortium

&  INTASC “Core Standards”
http://www.ccsso.org/content/pdfs/corestrd.pdf

& INTASC “Math Standards”
http://www.ccsso.org/projects/Interstate_New_Teacher_Assessment_and_Support_Consortium/Projects/Standards_Development/#math

Standards of Learning: Instruction, Training, and Assessment Resources,
Standards of Learning: Mathematics.  VA Dept. of Education
http://www.pen.k12.va.us/VDOE/Instruction/sol.html

Standards of Learning Test Information (1998 and 2000),
http://www.pen.k12.va.us/VDOE/Assessment/release2000/

National Assessment of Educational Progress
http://nces.ed.gov/nationsreportcard

Sample NAEP Questions

Third International Mathematics and Science Study (TIMSS)
http://nces.ed.gov/TIMSS/

TIMSS Achievement Items
http://www.timss.org/TIMSS1/items.html
Additional reading may be assigned for discussion, distributed by instructor, or posted on BlackBoard.