Education 475

Designs for Learning: Elementary Mathematics

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| **Prof:** Peter Liljedahl **Telephone:** 604-764-6764 **Office:** EDB 8660 **Email:** liljedahl@sfu.ca | | | | | | | | | | | | | | | |
| **Dates and Times** | | | | | | | | | | | | | | | |
| Jan 6 5:00pm – 8:40pm  Jan 13 5:00pm – 8:40pm  Jan 20 5:00pm – 8:40pm  Jan 27 5:00pm – 8:40pm  Feb 3 5:00pm – 8:40pm  Feb 10 5:00pm – 8:40pm  Feb 17 Family Day | | | | | | | | Feb 24 5:00pm – 8:40pm  Mar 2 5:00pm – 8:40pm  Mar 9 5:00pm – 8:40pm  Mar 16 5:00pm – 8:40pm  Mar 23 5:00pm – 8:40pm  Mar 30 TBA | | | | | | | |
| **Text** Van de Walle, Karp, K., Bay-Williams, J., & McGarvey, L. (2017) Elementary and Middle School Mathematics: Teaching Developmentally, Fifth Canadian Edition. Pearson Education Canada (ISBN-13: 978-0134095912)  **Website** <http://www.peterliljedahl.com/courses/educ475> | | | | | | | | | | | | | | | |
| **Course Requirements**  1. Problem Solving (20%)  Throughout the course you will be given several mathematics-based problems to work on. Your efforts for these problems are to be recorded in a log book. On March 9th this log, along with the good copies of three problems, will be handed in for marking (format to be specified).  2. Group Problem Solving Assignment (25%)  This is similar to the mathematics log assignment except that you will be recording the progress of a collaborative problem solving exercise. You will work in groups of 2-4 to solve the problem. On February 24th you will submit the solution to this problem in the form of a poster/project along with the group problem-solving log (format to be specified). Class time will be given to work on this assignment.    3. Reflective Journal Assignment (25%)  You will also be asked to think about some pedagogical issues regarding the teaching and learning of mathematics. Your thoughts on these issues are to be recorded in a journal. In addition, you will be asked to respond to readings from the text or supplemental material. It is important that each new entry into the journal is well marked with date and title. At the same time, you will also be asked to do some *quick write* journal entries. These will be done in class and will require you to be able to add to your journal at that moment. So, come prepared. You journal will be handed in on March 23rd. You may also hand it into me at any time during the course for feedback.  4. Math Play I – Diagnosis and Remediation (5%)  This assignment will be worked on in groups of 2 or 3 and submitted as a group. For this assignment you will be given an overview of the beginnings of a fictional mathematical interaction between a student and a teacher. The interaction may be in the form of a conversation, an in-class lesson, an in-class question and answer session, a teacher reading a students work (homework, project, or test) and it will present to you a situation in which a student has made an error in their work. Working in your groups you are to formulate a diagnosis of the source of the error and a plan for remediation. Individually, you are to write a 1 paragraph diagnose the source of the error, a 1 paragraph of the classroom setting, and a 2 page (double spaced) play as to how the interaction is played out and eventually resolved. This will be due on February 3rd.  5. Math Play II – Diagnosis and Remediation (25%)  This assignment will also be worked on in groups of 2-4. This assignment will be identical to Math Play I only larger in scale and scope. You will be required to produce a more detailed and comprehensive diagnosis, and a lengthier and more detailed play. This is due on March 30th.  6. Participation (0%)  Participation is mandatory for this course. This will take three forms – attendance, group work, and involvement in class discussion. If class is missed for either a foreseeable or unforeseeable reason please see me and a makeup assignment will be arranged. A large part of every lesson will involve small group work and whole class discussion. Your involvement in both of these is expected. Learning happens through dialogues not monologues. | | | | | | | | | | | | | | | |
| **Deadlines** | | | | | | | | | | | | | | | |
| Feb 3rd | | Math Play I | | | | | | | | | | | | | |
| Feb 24th | | Group Problem Assignment | | | | | | | | | | | | | |
| Mar 9th | | Problem Solving | | | | | | | | | | | | | |
| Mar 23rd | | Reflective Journal | | | | | | | | | | | | | |
| Mar 30th | | Math Play II | | | | | | | | | | | | | |
| **Grading Structure** | | | | | | | | | | | | | | |
| **Grade** | **A+** | | **A** | **A-** | **B+** | **B** | | **B-** | **C+** | **C** | **C-** | **D** | **F** |
| **Mark** | 96-100 | | 91-95 | 86-90 | 81-85 | 76-80 | | 71-75 | 66-70 | 61-65 | 56-60 | 46-55 | 0-45 |