

Basic Course Information

Semester	Fall 2016	Instructor Name	Allyn Leon
Course Title & #	Children's Mathematical Thinking, Math 114	Email	allyn.leon@imperial.edu
CRN #	10118	Webpage	http://imperial.instructure.com
Room	2727	Office	2760.2
Class Dates	10/21/2016 - 12/07/2016	Office Hours	M/W from 11:30 am - 12:30 pm Tu/Th from 2:00 pm - 3:00 pm
Class Days	Friday	Office Phone #	760-355-6523
Class Times	8:00 am to 11:10 am		
Units	1		

Course Description

Explore children's mathematical thinking with in-depth analysis of their understanding of operations, place value, algorithms, and multiple representations of problems. Examine interviews of children to assess understanding of mathematics topics, then plan tutoring sessions on basis of interviews.

Student Learning Outcomes

By the end of this course, you will be able to analyze an elementary child's thinking by personal interview using pre-defined problem types.. These outcomes will be assessed through selected exercises on exams throughout the semester.

Course Objectives

Through various activities and assessments, students will:

1. Demonstrate skill in recognizing representations of mathematical problems and their connections to children's understanding.
2. Demonstrate an understanding of problem types and solution strategies for addition and subtraction.
3. Demonstrate an understanding of problem types and solution strategies for multiplication and division.
4. Demonstrate alternative algorithms and a connection to complex elements of counting.
5. Demonstrate an understanding of place value concepts.

Textbooks & Other Resources or Links

1. **Textbook:** IMAP Select CD of Children's Reasoning.
2. Paper and writing tools for your interviews.
3. Counters you can use for your interviews.
4. Syllabus and course readings

Important Dates

Last day to add the class: **Friday 10/21/2016**

Last day to withdraw from the class with a "W": **Friday 12/02/2016**

See the schedule on the last page for important homework and test dates!

Course Requirements and Instructional Methods

General: Classroom instruction will consist of a combination of watching videos and discussion designed for student led learning. You will be required to participate in class discussions, group work and presenting work to the class. Failure to participate in class activities/discussions can result in lowering of your grade.

Homework: There will be 4 written homework assignments worth 25 points each. These assignments are described later in the syllabus. Homework will be graded on the completeness of your answer. You do not have to be "wordy," but fully answer the questions, using examples from the selected video when necessary. If it asks for your opinion, please explain yourself.

Interviews: There will be two (2) interviews of elementary age school children that are fully explained separately. The first interview is worth 50 points, the second is worth 100 points.

Exams: There will be a final exam worth 50 points. This is the only in-class exam.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Imperial Valley College Course Syllabus
Children's Mathematical Thinking - Math 114

Course Grading Based on Course Objectives

Your grade will be calculated based on the following items:

4 Homework Assignments @ 25 points each	100 points	~25%
1st Interview @ 50 points	50 points	~12.5%
2nd Interview @ 100 points	100 points	~25%
Presentations @ 50 points	50 points	~12.5%
Final Exam @ 100 points	100 points	~25%
<i>Total</i>	<i>400 points</i>	<i>100%</i>

Your final grade will be based on the following points and percentages:

90% to 100%	360-400 points	A
80% to 89%	320-359 points	B
70% to 79%	280-319 points	C
60% to 69%	240-279 points	D
Below 60%	Below 240 points	F

After each assignment/interview I will enter scores into Canvas. The **Canvas Gradebook** is where you want to go to check your grades and progress. You can do this at any time to get an idea of how you are doing in the class.

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette

- Electronic Devices: Please keep your cell phones on silent and/or vibrate while we're in class.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Water only, please.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313 if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

Academic Honesty

- Plagiarism is to take and present as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to correctly 'cite a source', you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment or using or attempting to use materials, or assisting others in using materials, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.
- Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an

Imperial Valley College Course Syllabus
Children's Mathematical Thinking - Math 114

assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service.

Additional Help

- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- Library Services: There is more to our library than just books. You have access to tutors in the learning center, study rooms for small groups, and online access to a wealth of resources.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at

<http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

Anticipated Class Schedule / Calendar

Week #	Date	In Class	Homework Due Dates
1	10/21	Introduction, Syllabus, IMAP disk View 21 - reflection questions View 20 - reflection questions View 22 - reflection questions View 1, 2, 3, Read Gretchen Story	
2	10/28	View 4 - Invented strategy View 5 - tens (how many in 100) View 6 - number sense View 7 - confusion with hundreds (watch interviewers) View 8 - decimal use	Homework 1 Due Homework 2 Due
3	11/04	View 9 View 10 View 11 View 12 View 13 - procedure vs. concept View 14 - what is the "whole"?	Interview 1 Due
4	11/11	Holiday	
5	11/18	Pattern blocks	Homework 3 Due
6	11/25	Holiday	
7	12/02	View 15 View 16 View 19 View 23 View 25	HW 4 Due Interview 2 Due
8	12/09	Student Presentations Final Exam	

Details on the Homework Assignments

HW 1 – Learning Style Survey (25pt):

- Go online and search for 'Learning Style Survey.' Choose two sites and take the two different surveys of learning styles. You may want to try more than two, but only turn in two. (10 pts)
[Note: One recommended site is from North Carolina State found at engr.ncsu.edu. There are MANY sites, but some of them want you to download something or join their site and, personally, I won't do that.]
- Print your results and the explanations (usually explained on another page of the site). Answer the following:
 - 1) Explain why you agree or disagree with the findings. (5pts)
 - 2) Explain why you think the explanations and study tips can be useful to persons wanting to become teachers (5pts)
 - 3) Compare the two sites (and your results) and tell me which one you think is more accurate and/or useful. (5pts)

HW 2 - Watch Video Clip #24, Richard (25pt).

- **Answer Reflection Questions:**
 - #1 (5 pts)
 - #2 (5 pts)
 - #3 (5 pts)
 - #6 (10pts)

HW 3 - Watch Video Clip #17 and #18 (25pt).

- **For #17 Answer reflection questions:**
 - #1 (5pts)
 - #2 (5pts)
 - #3 (5pts)
- **For #18 answer reflection questions:**
 - #1 (5pt)
 - #4 (5pt).

HW 4 - Pattern Block Fraction Activity (25 points).

- Correctly show how to solve fraction problems using pattern blocks as discussed in class.