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EDEC 540.50: Neuroscience and it's Impact on Child Development - Online

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EDEC 540 Neuroscience and Its Impact on Child Development (online)

Instructor: Jingjing Sun (pronounce as jīng jīng sūn), Ph.D., Associate Professor

Email address: Jingjing.Sun@umontana.edu

Office: 103, Education Building

Office hours: By email appointment

Credit hours: 3, Graduate level

Land Acknowledge

The University of Montana acknowledges that we are in the aboriginal territories of the Salish and Kalispel people. Today, we honor the path they have always shown us in caring for this place for the generations to come.

Course Description

This course is an overview of research and methods in developmental cognitive science and neuroscience, including examination of typical and atypical brain development in the early childhood years. The role of experience, the range of plasticity, and influences such as early intervention will be some of the topics explored. Also examined will be neuroscientific claims and whether research supports, contradicts, or does not provide enough evidence to determine the accuracy of the claim.

The course will be updated weekly on Wednesday. You can anticipate that the weekly activities will be devoted to an in-depth discussion of the issues raised in that week's readings.

Learning Goals

Many of you are about to become, or already are, education professionals in the early childhood settings. Thus, in this course we'll strive to make the link between understanding cognitive and brain development and applying that information to your professional work with children. Three specific goals drive the development of the course: 1) Building a strong knowledge base on child development, cognition and brain plasticity; 2) Identify strengths and limitations in research; 3) Advance knowledge translation in a context-sensitive manner.

Required Readings

In addition to the textbook below, we will have supplementary readings posted on Moodle. You may purchase or rent the book at UM Bookstore or at other online retailers.

Textbook: Siegler, R. S., & Alibali, M. (2021). *Children's thinking*. Upper Saddle River, NJ: Prentice Hall.

Accommodation for Special Requirement

As I teach, I try to be aware of the special needs of individuals as well as the needs of the group. If you require some accommodation, I encourage you to email me as soon as possible. Please feel free to

contact me to discuss assignments or the content of the course. I would also be happy to meet with you via ZOOM or a walk on campus as we navigate the COVID-19 situation.

Course Policies, Resources, and Expectations

Online Decorum: In online spaces, it is especially important to monitor one's tone while communicating. Humor and sarcasm are easily understood when one can see another person's face, but this is not true in online settings. Accordingly, please be thoughtful to convey respect in your written and verbal comments. If anyone at any time feels that classmates are not being respectful, please contact Dr. Sun immediately, and I will remedy the situation. Besides, as email is the primary way you will communicate with me, I appreciate your efforts to follow email courtesy and write concisely about your questions or concerns, so I can help address them timely.

Writing Center: Since you will write quite a bit for this online course, I'd recommend you to take advantage of the University of Montana Writing Center's outstanding (and free!) services of reviewing written assignments for online and distance students. You can set up an appointment in advance for staff to review your work before assignments using this [link](#).

Student Conduct Code: All students will be expected to comply with the academic honesty policies described in the [University of Montana Student Conduct Code](#), which embodies the ideals of academic honesty, integrity, human rights and responsible citizenship. It is also expected that each student will foster a collegial learning environment by sharing his or her experiential and academic knowledge and practices, as well as respectfully listening to the viewpoints of others and following basic netiquette rules. Students who need individualized accommodation due to a disability should contact Dr. Sun at the beginning of the course.

Academic Misconduct Policy: Any instances of academic misconduct, including plagiarism, will result in an **F** for the course.

Accommodating Disabilities: I wish to fully include each student in this course. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or 406-243-2243. I will work with you and Disability Services to provide an appropriate modification. For more information, visit the [Disability Services website](#).

Resources to combat food & house insecurity: Any student who faces challenges securing food or housing, and believes that this could affect their performance in this course, is urged to contact any or all of the following campuses resources, which include [food pantry program](#), [ASUM renter center](#), and [TRiO student support services](#).

Course Grading and Evaluation

Please keep a record of your own performance. It is a good idea to keep a copy of work and materials submitted online.

Grading

| | | | | |
|--------------------|------------|------------|------------|------------|
| 100-93 (A) | 92-90 (A-) | 89-87 (B+) | 86-83 (B) | 82-80 (B-) |
| 79-77 (C+) | 76-73 (C) | 72-70 (C-) | 69-67 (D+) | 66-60 (D) |
| 59 or below (F) | | | | |

Course Requirements & Due Dates Policy

Time management is part of the graduate and professional training in any field and industry. All assignments are due on the stated due date. The due dates are set to facilitate completion of certain milestones in the course before moving to subsequent goals. To maintain fairness and respect for those who try to maintain punctuality, no late assignments are accepted without advance communications with the instructor.

| Assignment | Percentage of Course Grade | Due Dates |
|---|-----------------------------------|--|
| Participation (online activities/discussions) | 30% | Initial post by Thursday, comments to others by Sunday |
| Leading Discussion | 20% | Summary due on the Monday after your assigned week |
| Reading response | 30% | 10/8, 11/5 |
| Intervention Critique | 20% | 12/13 |
| Total | 100% | |

Course Activities:

Participation (30%)

Every Monday, you will receive an email reminder about the start of a new week's content and the following week's readings. Every week there will be some forms of online activities, such as discussion forums, short quizzes, glossaries, etc. Within each week, you will engage in in-depth online discussions with your classmates where you will critically examine, reflect upon, discuss and debate, and analyze readings in relation to current early childhood practices and policies. Class participation will be evaluated on how consistent, timely, and thoughtful your contributions are to Moodle discussions.

Threaded Discussion Guidelines

In order to maximize the discussions, the following guidelines apply to your submissions.

- 1.) You should submit your weekly reflection by **Thursday night**. Since we have such a small class this time, you are highly encouraged to respond to your peers at least a couple of times every week to promote in-depth discussions.
- 2.) Your submission should be reflective, and show an effort to analyze the question from your perspective. The best submissions will be those that attempt to analyze problems from multiple perspectives, and pose critical questions in response to others' entries.
- 3.) A rule of thumb for length of submissions- about a couple of paragraphs.
- 4.) Don't forget to read other students' responses to your own post and reply back to them, just like what you would normally do during face-to-face discussions. This builds a strong, intellectually challenging, but rewarding discussion, and helps all of us learn the material better.
- 5.) These guidelines are certainly not meant to limit your participation—only to provide a suggested minimum. I'm eager to see what your responses are, and look forward to participating in this with you.

Three Mandatory Zoom Sessions

Over the years of teaching asynchronous online courses, I have learned the importance of building an online learning community through both written conversations and live ones facilitated by technology, such as Zoom. We will have three required meetings through this course, 9/9, 10/21, and 12/9, see detail in the Table of Topical Outlines below. The meetings are designed for you to meet Dr. Sun and your peers, clarify course expectations, facilitate discussions on the response paper assignment, and conduct a final review for the course. Please mark your calendar and I will send a reminder as the dates get close.

You can join the meetings at:

<https://umontana.zoom.us/j/3985511381>

Meeting ID: 398 551 1381

One tap mobile

+13462487799,,3985511381# US (Houston)

+16699006833,,3985511381# US (San Jose)

Leading Discussion (20%)

To increase active participation and engagement in the class, you will be responsible for leading **two** online discussions this semester. Please sign up for the weeks that you'd like to lead on the Table of Topical Outline below, p.5. As a leader, you do not have to post your own reflections that week, however, you will assume responsibility to think critically of the week's topic, read through all of your peers' posts on the online discussion forum, respond to as many as you deem appropriate, identify issues that need further clarification, and prepare an enlightening and informative summary that can keep us focused on important concepts. The format of your summary can be, but is not limited to an online post, a podcast, a Youtube video, annotated PowerPoint slides, or handouts. Post the final version of your summary no later than 11:55pm on **the following Monday after** your assigned week.

Reading Response (30%—two submissions)

For this activity, you will write response papers where you examine a claim and determine if the neuroscientific evidence found in your readings support or contradict the claim or if there is enough evidence to determine this. You will also discuss how this information might inform or change your practice. You should strive to provide a logical and scholarly, well-structured argument. Evaluation will be based on clarity in writing, thought given to your reflections, and depth of analysis.

Early Intervention Critique (20%)

You will choose one early intervention practice related to neurocognitive development to research, implement, and critique. Detailed instructions on this project will be provided later during the semester.

Topical Outline and Discussion Leader Sign Up

| Week | Date | Topic | Important Dates | Discussion Leader |
|-------------|-------------|--------------------------|---|--------------------------|
| 1 | 8/30 | Course Overview | | N/A |
| 2 | 9/6 | Development and Learning | Meet & Greet Zoom, Thur, 9/9. Attend at 5:45-6:15 pm | |
| 3 | 9/13 | Piaget | | |
| 4 | 9/20 | Vygotsky | | |

| | | | | |
|----|-------|--|---|-----|
| 5 | 9/27 | Perceptual Development | | |
| 6 | 10/4 | Social Cognition | Response Paper I due, 10/8 | |
| 7 | 10/11 | Social and Emotional Learning | Attend Dr. Dorothy Espelage's talk on Fri, 10/15, in Ali Auditorium (tentatively scheduled at 4-6pm, live stream available) | |
| 8 | 10/18 | Language Processing and Development | Zoom session on response paper feedback, attend at Thur 10/21 6:00-6:45 pm | |
| 9 | 10/25 | Bilingualism | | |
| 10 | 11/1 | Memory Development | Response Paper II due, 11/5 | |
| 11 | 11/8 | Conceptual Development | | |
| 12 | 11/15 | Executive Functions & Information Processing | | |
| 13 | 11/22 | Problem Solving | | |
| 14 | 11/29 | Academic Skills, Culture, and Equity | | |
| 15 | 12/6 | Review Week | Review Zoom Sessions Thur, 12/9, 5:50-6:30pm Intervention Critique due, Mon, 12/13 | N/A |