This course serves the goals of GMU’s General Education Mission to educate, liberate, and broaden the mind, and to instill lifelong love of learning. In conjunction with each student’s major program of study and other electives, minors, or certificates, it seeks to produce graduates with intellectual vision, creative abilities, moral sensibility, and the skills to assure a well-rounded and useable education. There are four specific goals:
1. To ensure that you develop skills in information gathering, written and oral communication, and analytical and quantitative reasoning.
2. To expose you to the development of knowledge by emphasizing major domains of thought and methods of inquiry.
3. To help you attain a breadth of knowledge that supports your specialization and adds to your personal and professional education.
4. To encourage you to make connections between disciplines, between GMU and the external world, and between the USA and other countries.

**Technology:**

The ability to make power point presentations is a requirement for students enrolled for more than one credit

**Content:**

This course is designed to convey important elements of experimental design that have broad utility in developmental psychology. Certain designs have special implications for interventions which are intended to produce lasting changes in children’s behavior and potentials for development. The course emphasis is on “bang for the buck”. How can you accomplish what you need to accomplish without overworking, using too many subjects unnecessarily, and consequently getting fewer research projects done? Gaining access to children for research purposes is often quite difficult. Working within the context of institutions which enroll or have custody of children demands efficiency and knowledge of designs that many psychologists do not know. They are not hard to understand, and will equip you well for efficient, effective, and valid research in many contexts.

Unit 1 July 11

Variables, Constructs and Validity: How can you know whether you are measuring what you intend to measure? How can you prove it? Denotative and connotative meanings of variables. Hypothetical constructs and intervening variables. The mult trait-multimethod approach. Convergent and divergent construct approach. Reading provided from Kerlinger text.

Laboratory experiments, field experiments, and field studies. What are their purposes? How do the goals of these types of research relate to their internal and external validity?
Temporary, Permanent and Self-Propagating Effects: How long should an age-appropriate intervention be expected to last as a child continues to develop? What may determine whether an effect is temporary, permanent or self-propagating? When is a stage a stage? What are overlapping waves? Reading provided from Pasnak and Howe text, Chen and Siegler monograph, relevant articles provided.

Unit 2 July 18

Designs with Single Subjects: Why run a second subject if one is sufficient? When is one sufficient? Case studies, power studies, and studies providing critical negative evidence. ABA (reversal) designs. Multiple baseline designs. Skinnerian stable state approach. Readings from Neale and Liebert text and representative journal articles provided.

Designs with a Single Group: How can you provide scientifically valid proof that your treatment works when you cannot assign subjects to different groups? Time series, time lag, and repeated measures designs. Readings from Neale and Liebert and representative journal articles provided.

July 19 Take-home exam posted.

July 24 Take home exam due

Unit 3 July 25

Designs with Multiple Groups: Parametric Research and the Maximinicon principle. How do you get the most valid results with the least investment of resources, subjects, and effort? Maximizing the effect of the independent variable. Reducing subject differences as a source of random variance via stratification (blocking) and/or homogenizing subjects. Using multiple measures of the same construct. Readings from Kerlinger text and representative journal articles provided.

July 26 Take-home final exam posted

Unit 4 August 1

Scientific tricks of the trade. When should you pretest and when should you not? Pros and cons of time lag and SEM approaches. When does ANCOVA backfire in developmental psychology? Working with school systems, Head Start and other institutions with special populations.

Presentations of articles exemplifying designs

August 4 Take-home final exam due
Grading:

This is a variable credit course. For students taking one credit, grades are based 20% on attendance and 40% on each exam. For students taking 2 credits, grades are based 20% on attendance, 30% on each exam, and 20% on presenting and discussing three journal articles exemplifying each of the research designs previously presented in class. For students taking three credits, grades are based 20% on attendance, 20% on each exam, and 20% on presenting and discussing six articles exemplifying each of the research designs previously described in class.

Honor policy:

The honor policy is in full effect.

Disabilities: If you have a disability and need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office. I’m happy to cooperate.