Fall 2021 **GS11 1132: Introduction to Genetic Counseling** Credit Hours: __2_____ Meeting Location (Building/Room # or WebEx/Zoom): MSB.B612 (or WebEx as noted)	Program Required Course: _X__ Yes ____ No Approval Code _X_ Yes ____ No **(If yes,** the Course Director or the Course Designee will provide the approval code.) Audit Permitted: _____ Yes __X__ No Classes Begin: 8/17/21 Classes End: __12/06/21 Final Exam Week: 12/06/21

Class Meeting Schedule:

Day	Time
Monday	9:00-11:00 a.m.

Course Co-Directors: Aarti Ramdaney, MS, CGC Certified Genetic Counselor and Assistant Professor UT Prenatal at Suite 1217 Aarti.Ramdaney@uth.tmc.edu 713-486-2299 Malorie A. Jones, MS, CGC Certified Genetic Counselor and Assistant Professor Assistant Director of External Rotation, UTGCP UT Prenatal at Suite 1217 Malorie.A.Hensley@uth.tmc.edu 713-486-2297 **NOTE:** Office hours are available on request. Please email us to arrange a time to meet.	**Instructor/s:** See page 8 & 9 for full list of course instructors

Course description:
This class is designed to provide a foundation for the vast amount of knowledge that you will be gaining throughout your first semester at the UT GCP. Genetic counseling is a complex and unique discipline that requires many layers of knowledge to deliver expertly. This course should be viewed as the first layer in your training.

Overall Class Textbooks

- Uhlmann, Schuette, Yashar (2009) A Guide to Genetic Counseling,ISBN#9780470179659
- Veach, LeRoy, and Bartles (2003) Facilitating the Genetic Counseling Process, ISBN#0387003004
- Harper, P (2004) Practical Genetic Counseling, 6th edition, ISBN #03081196

History of the Profession

- Ulhmann, Chapter 1 (do not read PBCs in Appendix)
- Heimler, A (1997) An Oral History of the National Society of Genetic Counselors, J Genet Couns, 6(3): 315-336. (also @www.nsgc.org)
- Weil et al. "The Relationship of Nondirectiveness to Genetic Counseling: Report of a Workshop at the 2003 NSGC Annual Education Conference." Journal of genetic counseling 15.2 (2006): 85–93.
- Scope of Practice: https://www.nsgc.org/p/cm/ld/fid=18#scope or see p36 in M-V

Alternate Service Delivery

- Boothe et al. "Genetic Counseling Service Delivery Models: A Study of Genetic Counselors' Interests, Needs, and Barriers to Implementation." Journal of genetic counseling 30.1 (2021): 283–292.
- Cohen et al (2019) Genetic Counseling and Testing in a Community Setting: Quality, Access, and Efficiency. American Society of Clinical Oncology educational book 39.39 (2019): e34–e44.
- Greenberg et al. "Genetic Counseling Service Delivery Models in the United States: Assessment of Changes in Use from 2010 to 2017." Journal of genetic counseling 29.6 (2020): 1126–1141.
- Rhoads and Rakes. "Telehealth Technology: Reducing Barriers for Rural Residents Seeking Genetic Counseling." Journal of the American Association of Nurse Practitioners 32.3 (2020): 190–192.
- NSGC Professional Status Survey 2020: Service Delivery and Access

Pedigree Construction:

- Uhlmann, Ch 2
- Bennett et al. "Standardized Human Pedigree Nomenclature: Update and Assessment of the Recommendations of the National Society of Genetic Counselors." Journal of genetic counseling 17.5 (2008): 424–433.
- Harper, Ch 3 and Ch 9 [skim]
- Bennett. The Practical Guide to the Genetic Family History. 2nd ed. Hoboken, N.J: Wiley-Blackwell, 2010. Available through the TMC library with your UT credentials: https://onlinelibrary.wiley.com/doi/book/10.1002/9780470568248

Risk Assessment I:

- Ogino, Shuji, and Wilson. "Bayesian Analysis and Risk Assessment in Genetic Counseling and Testing." The Journal of molecular diagnostics : JMD 6.1 (2004): 1–9.
- Ogino, Shuji et al. "Bayesian Analysis for Cystic Fibrosis Risks in Prenatal and Carrier Screening." Genetics in medicine 6.5 (2004): 439–449.
- Ogino, Shuji et al. "Bayesian Risk Assessment in Genetic Testing for Autosomal Dominant Disorders with Age-Dependent Penetrance." Journal of genetic counseling 16.1 (2007): 29–39.
- Warburton et al. "Trisomy Recurrence: A Reconsideration Based on North American Data." American journal of human genetics 75.3 (2004): 376–385.

Optional readings for Risk Assessment Lectures:

- De Souza, Elizabeth et al. "Recurrence Risks for Trisomies 13, 18, and 21." American Journal of Medical Genetics Part A 149A.12 (2009): 2716–2722.
- Young (1991) Introduction to Risk Calculation in Genetic Counseling in Probability and Genetic Counseling.*
- Harper P (7th ed.) Chapter 2: Genetic Counseling in Mendelian Disorders in Practical Genetic Counselling
- Harper P (2004) Chapter 9: Special Issues in Genetic Counselling in Practical Genetic Counselling

*available for check out from the UT GCP (suite and bioinformatics)

Introduction to Cultural Competency:

- Ch 11 in Uhlmann
- Ch 9 in Leroy's Genetic Counseling Practice: Advanced Concepts. Ch. 9 Honoring Diversity - borrow book from your second year

Working with Interpreters

- Flores et al. "Errors of medical interpretation and their potential clinical consequences: a comparison of professional versus ad hoc versus no interpreters." Annals of emergency medicine vol. 60,5 (2012): 545-53. doi:10.1016/j.annemergmed.2012.01.025
- Gutierrez et al. "Portero versus portador: Spanish interpretation of genomic terminology during whole exome sequencing results disclosure." Personalized medicine vol. 14,6 (2017): 503-514. doi:10.2217/pme-2017-0040

Healthcare Disparities

- National Academies of Sciences, Engineering et al. Understanding Disparities in Access to Genomic Medicine: Proceedings of a Workshop. Washington, D.C: National Academies Press, 2018.
- https://www.click2houston.com/news/local/2020/07/31/covid-19-exposes-major-disparities-between-neighboring-houston-area-communities-gulfton-and-bellaire/
- https://www.idsociety.org/globalassets/idsa/public-health/covid-19/covid19-health-disparities.pdf
- https://www.houstonchronicle.com/news/houston-texas/houston/article/Where-are-Harris-County-s-COVID-19-cases-15227180.php
- https://www.houstonchronicle.com/business/article/Cancer-cluster-identified-in-Houston-neighborhood-14885972.php
- Podcast: https://podcasts.apple.com/ge/podcast/addressing-systemic-racism-disparities-in-genetic-testing/id1456153684?i=1000493156357
- Podcast: https://beaglelanded.com/podcasts/racism-and-genetic-counseling-aishwarya-arjunan-and-carrie-haverty/

Clinical Documentation

- TBD

Course Objectives:

1. Recognize the value of the NSGC Code of Ethics

2. Construct relevant, targeted, and comprehensive personal and family histories/pedigrees using standard pedigree nomenclature
3. Gain baseline knowledge of basic family history and pedigree analysis and risk assessment tools
4. Appreciate the importance of cultural competency and learn resources for multicultural genetic counseling
5. Document a case and begin to understand the case management process
6. Access and utilize genetics and genetic counseling literature
7. Develop written materials appropriate to the audience
8. Effectively give a presentation on a genetic topic
9. Establish professional relationships to function as a part of the health care team

Student responsibilities and expectations:
Students enrolled in this course will be expected to perform the following activities each week.

1. Read, process, and review required readings prior to class
2. Participate in and contribute to discussions during lecture
3. Complete all assignments and presentations (see **Course Grading** for more details on each assignment)

Students are expected to complete all assigned reading material prior to class. While you may work and discuss all course materials in groups, all assignments must be your own. Plagiarism and failure to properly cite scientific literature and other sources will not be tolerated and are grounds for dismissal from the course and further GSBS disciplinary action. Cheating or engaging in unethical behavior during examinations will be grounds for dismissal from the course without credit and further GSBS disciplinary action.

Attendance is mandatory for all assigned classes. Missing more than one class for any reason (excused or unexcused) will result in a reduction in the student's final letter grade by one full letter grade. Only illness with a doctor's note will be considered for exceptions to this rule. Make-up work will be required. Please be aware that 2 tardies of 5 minutes or more to class will be considered an unexcused absence.

Grading System: A-F (% out of 165 points)	
Student Assessment and Grading Criteria :	
Pedigree Assignment (15 pts)	Due 09/13/21 to Jacqueline Harkenrider by email To be distributed in class on 8/30/21
Case Preparation Assignments (30 pts; each case prep worth 10 points)	Case Prep #1 due on 09/20/21, #2 on 10/18/21, and #3 on 11/15/21 to Aarti and Malorie by email To help you think about case prep for when you enter clinical rotations, you will be given three case scenarios to work through. Each case scenario will be available on the drive two weeks before the due date (i.e. Case Prep #1 will be on the drive on 9/6) and please prepare each case to the best of your ability. You will be assigned groups in November to discuss an assigned case prep scenario and will create a powerpoint to walk through the case for your classmates. Your group will then present your assigned case in class on 12/6/21.
Cultural Competency Assignment (5 points)	Due in class to Aranza and Myla on 9/28/21 To be in drive by 9/7
Research Assignment (10 pts)	Due 10/11/21 to Meagan Choates by email To be distributed in class on 9/20/21
Class Presentations (10 pts)	Topic to be approved by Aarti and Malorie by 10/22 and drafts must be submitted by 11/15; presentations will be on 11/29 This presentation is designed to build on your cultural competency skills and should be approximately 10-12 minutes in length, with a few minutes for questions and class discussion. For this presentation, please select a patient group within the United States that may be rarely discussed in detail in other classes (ex. Cajun, Amish, Gullah/Geechee, d/Deaf, Navajo, Egyptian, patients that are incarcerated, patients that are transgender, etc). Please approve your group selection by emailing Malorie and Aarti by 10/22; selections will be approved in the order emails are received. For the presentation, please inform us about your selected group. This can include information on shared background, beliefs, lifestyle, and any geographical regions in the US with a larger population or the number of people in Houston that identify with that group. What are some barriers that individuals within your selected group may face to access to health care? Does your group share certain beliefs towards medical care, genetic conditions, and genetic testing? How

	would this impact your strategy in a genetic counseling session? Please also feel free to include any details you found interesting about your selected group that is unrelated to the medical field. A draft of your presentation is due to Aarti and Malorie by 11/15.
Risk Assessment Assignment (15 pts)	Due 11/08/21 to Jen C. by email To be distributed in class on 11/2/21
Inheritance Explanations (10 pts)	Due 11/12/21 to Aarti and Malorie by email Autosomal dominant (ex. Marfan syndrome): Latonya, Emily Autosomal recessive (ex. Cystic Fibrosis): Madeline, Tessa X-linked (ex. Fragile X): Erin, Cindy Mitochondrial (ex. MELAS): Yusra, Jasmine Multifactorial (ex. diabetes, isolated heart defect): Jack, Jordan With your assigned inheritance pattern, you will write two explanations. For the first explanation, please explain the inheritance pattern in question as if you are discussing the case with a rotating resident. Focus on providing complete and accurate information geared towards someone with a high level of background knowledge and who is objective with the case. For the second explanation, please explain the inheritance pattern in question as if you are discussing with a family who has a young child with a disorder inherited in that specific pattern. Remember that the family has limited working knowledge of genetics and focus on providing succinct and clear information. If you would prefer, you may use the condition in parenthesis to explain the inheritance pattern. You do not have to explain the specific condition (natural history, treatment, etc).
Inheritance Visual Aids (5 pts)	Due 11/12/21 to Aarti and Malorie by email In addition to your assigned inheritance pattern explanations, develop at least 1 slide/visual aid for each of the inheritance patterns: autosomal recessive, autosomal dominant, X-linked, mitochondrial inheritance, and multifactorial inheritance. You can use visual aids from the internet, though we encourage thinking of how you may want to customize such aids.
Risk Assessment Quiz (20 pts)	On 11/19/21
Inheritance Write-ups (5 pts)	Due 11/22/21 to Aarti and Malorie by email

	Following the inheritance pattern role-plays, discuss your performance and how your explanations and visual aids from assignment #2 changed or did not change given your patient. Were there certain explanations that worked or did not work? Did you have to go back and clarify details? How did you use your visual aids? Additionally, review any feedback you received during the role-plays and what you found helpful vs harder to achieve.
Documentation Assignment (10 pts)	Due 12/06/21 to Alana, Emily, Aarti, and Malorie by email To be distributed in class on 11/22/21
Clincial Observations (30 pts)	Due 12/06/21 to Aarti and Malorie by email Observe one session from each of the three UT rotation blocks. It is your responsibility to contact counselors at the core sites to secure a date/time for observation and please see page 7 for who to contact and timelines. If the session includes eliciting a family history, please take a shadow pedigree. Please also write a one-paragraph summary of the case you observed, including the reason for referral, material discussed, family dynamics, psychosocial issues that arose, and your reaction to the case. When you have completed all three observations, email your de-identified shadow pedigrees and summaries to Aarti and Malorie.

Clinical Observations

- **a.** Prenatal (prefer AMA, FTS, or positive serum screen) – email Meagan Choates (meagan.giles@uth.tmc.edu) for September and October and Shannon Mulligan (shannon.k.mulligan@uth.tmc.edu) for November
- **b.** Medical Genetics (prefer tues/wed/thurs clinic, LBJ or Shrine general)- email Leslie Dunnington (Leslie.A.Newman@uth.tmc.edu) and Kate Mowery (Kate.Mowrey@uth.tmc.edu)
- **c.** Cancer (prefer HBOC or Lynch) – email Julie Moskovitz (jbmoskowitz@mdanderson.org)

	Prenatal	Cancer	Medical Genetics
September	Latonya Madeline Erin	Yusra Jack Emily	Tessa Cindy Jasmine Jordan
October	Tessa Cindy Jasmine Jordan	Latonya Madeline Erin	Yusra Jack Emily

November	Yusra Jack Emily	Tessa Cindy Jasmine Jordan	Latonya Madeline Erin

CLASS SCHEDULE

Date and Location	Duration (Hr)	Lecture Topic	Lecturer/s
8/17/21 MSB B.612	10am-12pm	History of the Profession	Claire Singletary, MS, CGC
8/30/21 MSB B.612	9-11am	Pedigree Construction and Analysis	Jacqueline Harkenrider, MS, CGC
09/07/21 *virtual	10am-12pm	Alternate Service Delivery	Kate Dempsey Principe, MS CGC
09/13/21 MSB B.612	9-11am	Research 101: Designing and Constructing a Research Study	Syed S. Hashmi, MD, MPH, PhD Meagan Choates, MS, CGC
09/20/21 MSB B.612	9-11am	Research 101: Introduction to Study Design	Syed S. Hashmi, MD, MPH, PhD Meagan Choates, MS, CGC
09/28/21 MSB B.612	10am-12pm	Introduction to Cultural Competency	Aranza Gonzalez Cendejas, MS, CGC Myla Ashfaq, MS, CGC
10/4/21 MSB B.612 MSB B.620	9am-12pm	Pedigree Workshop	Aarti Ramdaney, MS, CGC Malorie Jones, MS, CGC
10/11/21 *virtual	9-11am	Working with Interpreters	Priscila Hodges, MS, CGC
10/18/21 *virtual	9-11am	Heatlthcare Disparities	Victoria Wagner, MS, CGC
10/25/21 MSB B.612	9-11am	Risk Assessment I	Jennifer Czerwinski, MS, CGC
11/2/21 MSB B.612	9-11am	Risk Assessment II	Jennifer Czerwinski, MS, CGC
11/8/21 MSB B.612	9-11am	Population Genetics	Craig L. Hanis, Ph.D.
11/15/21 MSB B.612 MSB B.620	9-12pm	Inheritance Pattern Workshop	Aarti Ramdaney, MS, CGC Malorie Jones, MS, CGC
11/19/21 MSB B.612	12-1pm	Risk Assessment Quiz	Jennifer Czerwinski, MS, CGC
11/22/21 MSB B.612	9-11am	Clinical Documentation	Alana Cecchi, MS, CGC Emily Hansen-Kiss, MS, MA, CGC
11/29/21 MSB B.612	9am-12pm	Student Presentations	Aarti Ramdaney, MS, CGC Malorie Jones, MS, CGC

12/6/21 MSB B.612	9-11am	Case Prep Workshop/Discussion	Aarti Ramdaney, MS, CGC Malorie Jones, MS, CGC

Course Instructors

1. Claire Singletary, MS, CGC
   Professor , Department Of Obstetrics, Gynecology, And Reproductive Sciences
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2. Jacqueline Harkenrider, MS, CGC
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3. Kate Dempsey Principe, MS CGC
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4. Syed S. Hashmi, MD, MPH, PhD
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