



Introduction to Entrepreneurship in Neuroscience

Course Number/Section: NSC4360-501

Course Title: Introduction to Entrepreneurship in Neuroscience

Classroom: Online

Term: Spring 2021

Dates: January 25th – May 3rd

Days & Times: Monday 7:00pm - 9:45pm

Professor Contact Information:

Professor: Dr. Robert L Rennaker II

Email Address renn@utdallas.edu

Office Location: BSB 14:570

Office Hours: 1 hour following class, or email for appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

recommended: [NSC 3361](#) and [NSC 4352](#) and [ENTP 3301](#). (3-0) M

Final Exam: N/A during covid

Course Description:

Many of the major medical problems facing our society are related to neurological diseases. The rapidly growing field of bioelectric medicine provides a unique opportunity for Neuroscientists to apply their understanding of the nervous system to highly technical solutions for patients dealing with neurological injury and disease. In order to have a successful career in industry there are valuable skills that must be developed. These skills allow one to navigate the world of start-ups as well as well established companies with a focus on medical devices. These skills when understood will not guarantee success, but will give one the best chance at succeeding. This course is an attempt to teach the set of skills necessary to understand the complex world of medical device development in and out of a start-up environment. This course will cover business model development for a start-up, device design, regulatory affairs, quality systems, emotionally intelligence, effective communication, and leadership.

The focus of this course is on how to apply fundamental knowledge in neuroscience to the process of developing effective new therapies. Students will learn how targets are identified, and how the process of product development proceeds. As well as translational activities necessary to realize viable commercial solutions.

Course Structure:

Asynchronous-

1. Lectures and assignments will be posted on-line. You are expected to watch these lectures and perform the assigned homework prior to the synchronous lecture.
2. You will be placed in teams. You and your team are expected to meet online once per week and take meeting minutes or record the meeting session.

Synchronous-

1. Class time will be focused on interacting with the instructor and colleagues to develop a viable business model and to practice skills learned in the course. I will answer questions and help guide your progress
2. Each team will meet with the instructor for 10-15 minutes.



3. Quizzes will be given during online lectures.

Student Learning Objectives/Outcomes

After completing the course, students should be able to:

1. Define a start-up
2. Develop a business model canvass and pitch
3. Describe the regulatory pathway for medical devices
4. Describe what a quality system does for a medical device company
5. Describe key features of emotional intelligence
6. Describe an infinite company versus a finite company
7. Describe keys to leadership
8. Describe why failure is key to success
9. Describe regulatory steps for a medical device to reach the market.
10. Describe major sections of 21 CFR 820.3
11. Be able to develop a Gantt chart
12. Create a financial model for 3-5 years of operation

Required Textbooks and Materials

- 1) The Startup Owner's Manual; Steve Blank and Bob Dorf
- 2) Biodesign, The Process of Innovating Medical Technologies; Paul G. Yock, Stefanos Zenios, Josh Makower, Todd J. Brinton, Uday N. Kumar, F. T. Jay Watkins, Lyn Denenda, Thomas M. Krummel, Christine Q. Kurihara
- 3) EQ Applied: The Real-World Guide to Emotional Intelligence; Justin Bariso:
https://www.amazon.com/EQ-Applied-Real-World-Emotional-Intelligence/dp/B07RTC1NX5/ref=tmm_aud_swatch_0?encoding=UTF8&qid=&sr=
- 4) <https://www.udacity.com/course/how-to-build-a-startup--ep245>

Course Policies & Requirements

This course is requires a significant amount of reading to complete the course successfully. This is an interactive course. Much of the work will be completed in class. You are required to attend every class.

Grade Changes:

There will be no grade changes.

Exams: None

Attendance: All students are expected to attend each class. Quizzes during class are used to evaluate your progress and help me pace the course. Only official UT Dallas events or documented medical emergencies will be excused. You are expected to complete all the reading prior to class. Class will be spent reviewing and discussing the readings. You cannot make up quiz grades.

Grading Policy and Final Grade Scale



Grades will be based on weekly assignments.

Presentations will be recorded by the student and uploaded to e-learning.

As the instructor of this course, I reserve the right to make subjective judgments about a student's understanding of the material that may not be accurately reflected in quiz scores. These adjustments will be based on my personal interaction with students in the course.

GRADING SCALE:

Percent Grade Point Range Totals

96.0-100% A+
93.0-95.99 A
90.0-92.99 A-
86.0-89.99% B+
83.0-85.99% B
80.0-82.99% B-
76.0-79.99% C+
73.0-75.99% C
70.0-72.99% C-
60.0-69.99% D
59.99% and less F

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see <http://go.utdallas.edu/syllabus-policies>.

Classroom Conduct Requirements Related to COVID-19

UT Dallas requires that all students must wear a face covering that covers the nose and mouth in all university buildings and classrooms. To help protect the health and safety of students, instructors, and the University community, students who choose not to wear a face covering may not attend class in person but may attend a course remotely. Anyone attending class in person without a face covering will be asked to put one on or leave. Instructors may end the class if anyone present refuses to appropriately wear a face covering for the duration of class. Students should also be sure they are at least six feet away from their fellow students and faculty, and seated in a seat that is designated to ensure that distance. Students who either refuse to wear face coverings appropriately or to adhere to other social distancing protocols may face disciplinary action for [Student Code of Conduct](#) violations. Students who are unable to comply with the university policies including wearing a face covering should consult the [Comets United](#) webpage for further instructions.

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "[What should I do if I become sick?](#)" webpage)



Class Attendance- In Person Courses Only

In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements, including wearing a face covering and other public safety requirements related to COVID-19, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

NOTE: if the instructor records any part of the course, then the instructor will need to use the following syllabus statement:

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be



downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year. The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972-883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrates a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Withdrawals from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*. In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator,



or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been COMPLETED SUCCESSFULLY. You must get the permission of the instructor and make arrangements for incomplete work prior to this grade being assigned. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m. The contact information for the Office of Disability Services is:
The University of Texas at Dallas, SU 22

PO Box 830688

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance. It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated. The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding a religious absence and in advance of the assignment. All religious holidays that will be observed should be submitted in writing to the instructor at the beginning of the semester. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails



to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment. If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Academic Support Resources

The information contained in the following link lists the University’s academic support resources for all students.

Please see <http://go.utdallas.edu/academic-support-resources>.
