

Financial Services Analytics (FSAN) Ph.D. Program Policy - 2020

FSAN Program Timeline and Highlights

The Ph.D. in Financial Services Analytics is a university-wide, multi-disciplinary graduate program with scientific curriculum that builds upon the research and educational strengths of departments across the College of Engineering (COE), and the Lerner College of Business and Economics (LCBE). Graduates of the Ph.D. in Financial Services Analytics Program are researchers and professionals, who play key roles in multi- and interdisciplinary teams, bridging the financial services industry and data and operational sciences. This program provides students with the knowledge, skills, tools and tactics to turn data into value. Students accepted into the program are required to successfully complete both coursework and research requirements. Highlights of these requirements include: the necessary academic coursework, a written summer paper, a qualifying exam, successful dissertation proposal and a dissertation defense, in accordance with the University of Delaware's guidelines, and at least one published paper. More specific details about each of these requirements and timing is outlined below.

Program Requirements

Requirements	Completion Time
Coursework	First two years
Summer Paper Proposal Due	May – end of 2 nd semester
Completed Summer Paper	December – end of 3 rd semester
Qualifying Exams	July – before 3 rd semester
Make-Up Exams	December – end of 3 rd semester
Dissertation Proposal Defense	By the end of the 5 th semester
Dissertation Completed	Four years with financial support, no more than 7 years
One published paper in a peer reviewed journal or one second-round revision in a top tier academic journal, justified by your supervisor	By the time of graduation

Coursework Requirements

During the first two years of their program, FSAN students are required to complete a minimum of 30 hours of coursework specified in the FSAN program curriculum. This includes 6 cross-curricular, core courses, a required ethics course, 9 credits (3 classes) of electives, 6 credit hours of seminar, and 9 credit hours of doctoral dissertation. Throughout this coursework, students must maintain a 3.0 cumulative GPA.

Summer Paper Requirements

As well as their rigorous academic coursework, graduate students in the FSAN Program are required to conduct research, write and present a summer paper during their second and third semesters. Prior to the end of their first year of study (May), each student must select a topic for their summer research paper. The names of a summer paper advisor, who should be an IFSA affiliated professor, and two additional faculty reviewers, together with a research paper proposal must be submitted at this time. This scholarly paper may be an extension of existing theoretical models, an implementation of existing approaches for new applications, empirical studies with some data collection or an extensive literature review. The final paper, at least 20 pages in length, must be submitted and presented before the end of the third semester (December). A successful summer paper requires a passing grade from at least two professors.

Qualifying Exam Requirements

To demonstrate their knowledge and understanding of the material and concepts of the program's core curriculum, FSAN students are required to take a comprehensive, qualifying exam. This exam will be taken at the end of the student's first year of study and consists of subject tests based on the program's 6 core courses.

In order to advance in the program, a student must successfully complete the six core course requirements with a grade of B or higher. Students who receive more than one grade of C or below in the core curriculum will be dismissed from the program and therefore ineligible to sit for the qualifying examination.

Among students who take the qualifying exam, those who fail 4 or more subjects will be dismissed from the program. Otherwise, they are given the option of retaking the failed subjects.

If a student receives a grade of a C or lower in any one of the six core curriculum courses, he or she must pass all 6 subjects, either in the initial exam or through the retake option. Otherwise, the student is dismissed from the program.

If a student receives no grade of a C or lower in any one of the six core curriculum courses, he or she must pass 5 out of 6 subjects, either in the initial exam or through the retake option. Otherwise, the student is dismissed from the program.

Qualifying examinations will be offered in the summer of Year 1 (July), with the retake exams to be scheduled in December.

M.S. Degree Option Requirements

Within the week of being notified of the qualifying exam results, all students have the option to choose the FSAN M.S. Degree option and exit from the Ph.D. program. To receive this degree, a student needs to complete all required coursework with at least a 3.0 GPA. No additional financial support is available once a student has declared the M.S. option. This is the only time this M.S. degree option is offered.

Dissertation Proposal Requirements

Each Ph.D. student in the FSAN program must establish a Dissertation Committee as soon as he/she passes the qualifying exam but no later than the end of the second year of study. The Committee should consist of at least four faculty members, including a primary faculty advisor chosen from the IFSA affiliated faculty members, and at least one additional faculty member from the COE and one additional faculty member from the LCBE, and an external member outside of LCBE and COE. Additionally, by the end of their 5th semester, students are expected to complete and present their dissertation proposal to their committee members.

A successful dissertation proposal should meet the following criteria:

1. The proposal's **content** should be logically organized, clearly presented, and carefully written.
2. The proposal should be sufficiently **comprehensive**. It should have at the minimum following sections: introduction, literature review, proposed research questions, models, preliminary results, and future research plan.
3. Potential **research questions and models should be clearly stated and defined**.
4. Research **methodologies should be clearly described**.
5. The proposal should include **preliminary research results** such as model formulation, initial analysis, data collection, numerical experiments, or similar proof that the proposal has potential for interesting results.
6. The proposed **research plan should be likely to be successful** as judged by committee members.

There are four possible grades for a dissertation proposal defense: Pass, Conditional Pass, Revision and Redefend (R&R), and Fail. A student receiving a Pass grade will become a PhD candidate of FSAN program.

The conditional pass applies to a proposal defense that meets the following conditions:

- a. Committee members are happy with the research directions and topics and believe they will lead to a successful dissertation.
- b. The student has done sufficient preliminary research work along the proposed research directions.
- c. The student's proposal presentation is well organized and well received by committee members.

If a student receives a conditional pass, he/she needs to revise the written proposal according to the committee suggestions (e.g., improved writing, more literature review, better specified future research problems and potential contributions) and turn in the revised proposal to the committee and the FSAN program office before the last day of classes for the Fall semester. The dissertation chair will then collect the feedback from committee members on this revised proposal. If committee members are happy with the proposal revision, the proposal is passed and no re-defense is necessary. If any committee member is not satisfied with the revision, a re-defense will be scheduled during the first week of the spring semester and the student will have one more chance to pass the proposal defense. Committee chairs, it is your responsibility to notify the FSAN program office when your student has successfully met the conditions and therefore passed or that they must re-define their proposal once the decision has been made by the committee or no later than the end of the calendar year.

As a reminder, pass grade will be given to only the situation where all committee members are in agreement and are satisfied with the proposal defense.

A student receiving an R&R or a Fail grade will be given an opportunity to re-define the proposal before the end of the 5th semester. Redefining proposals will take place during the first week of the spring semester. A student who fails the dissertation proposal defense will be put under academic probation. A student who fails the proposal defense twice will be dismissed from the program.

Dissertation Requirements

Once a student becomes a Ph.D. candidate in the FSAN program, it is essential that they work with their supervisor and dissertation committee to complete their dissertation in accordance with all of the University of Delaware's requirements outlined in this link below.

<https://grad.udel.edu/policies/step-by-step-guide-to-graduation/>. The final version of the dissertation must be submitted to the committee members at least one month in advance.

Research Publication Requirements

In order to graduate from the FSAN program, each student is required to have at least one paper either accepted by a peer-review journal, or accepted by a peer-review conference proceeding in computer science or engineering disciplines, or have one paper in the second round revision of a top tier journal as determined by his/her dissertation supervisor.

Funding Policy

Students entering the FSAN Program are provided with appropriate tuition waiver and/or stipend. Funding will be renewed annually based on availability and student performance. Student funding stops after a maximum of 4 years or when a student leaves or is dismissed from the program. Funding may be reduced if a student is placed on academic probation due to

unsatisfactory progress in the FSAN program. In addition, a student will not receive a stipend from the FSAN program if he or she receives funding from other sources, unless otherwise approved by the director. Additionally, a student will lose all FSAN financial support (tuition and stipend) if he or she chooses to work before graduation.

In addition to tuition and stipend funding, other funding opportunities available to students in the FSAN program include summer research funding and conference travel funding. In order to be considered for summer research funding, interested students must apply by March 1st. This funding is open to all FSAN students. A student's application for this funding must include the research topic and description, research plan, estimated time commitment and an endorsement from your faculty advisor. Misuse of these funds may lead to reduced or eliminated summer funding for the following year.

Additionally, in an effort to involve students in the financial services industry and provide valuable opportunities for education and networking, all FSAN students, who have passed their qualifying exam, are also eligible for conference travel funding up to one conference per year. The conference chosen should be relevant to the FSAN program and the student's research and prior approval from the program director is needed before the travel can be taken. Approval and amount of the funding is dependent upon the student's role in the conference, the student's academic progress, his/her past participation in IFSA/FSAN events, budget availability, number of previous conferences attended, and how efficiently travel funds will be used.

Performance Evaluation Policy

Students are expected to adhere to the UD graduate program academic policy outlined in the link here: <http://grad.udel.edu/policies/graduate-academicpolicies/#gpa> and the specific FSAN program requirements detailed in this document. In order to maintain a high quality, academically rigorous program, performance reviews for all students will be conducted annually in April. Students who fail to meet the UD graduate program policy or fail to make satisfactory progress in the FSAN program may be placed on academic probation, receive reduced financial support, no renewal of financial support, or they may be dismissed from the FSAN program.

Each FSAN student will be evaluated in the following areas: academic performance which includes grades, summer paper, qualifying exam and dissertation progress, participation in IFSA/FSAN activities such as seminars, conferences, and workshops, and personal evaluations (every semester) from a student's faculty advisor, professors they are assigned to work for, and any internship supervisors they may work with. Additionally, feedback or comments from other IFSA faculty members and the Program director will also be used to evaluate student performance.