Stevens Institute of Technology

School of Business

**AACSB
ASSURANCE OF LEARNING PLAN**

**Master of Science in Financial Technology and Analytics**

 **(FTA)**

June, 2024

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# 1. INTRODUCTION AND OVERVIEW OF FTA Master’s DEGREE

The financial technology and analytics program is preparing students to use their programming skills with data analysis and statistics to design innovative solutions to finance problems. The students will also use business and communication skills to assess client needs and either develop or lead executive teams to provide solutions that fit the needs.

The core knowledge gathered during the program is concentrated in statistics, artificial intelligence, and machine learning techniques applied to finance. The program has three distinct concentrations.

1. The *Fintech and Machine Learning concentration* is concerned with development of new statistical techniques and integrating them into strong potential, new lines of business.
2. The *Data Science and Optimization concentration* is focusing on optimizing data streams as well as developing optimal financial models that help take the best decision for management, trading, portfolio managing and many more.
3. The *Advanced Risk Analytics concentration* is looking at estimating risk and incorporating it into the decision-making process. From portfolio risk, credit risk, liquidity risk, to leverage, event, and systemic risk the students look at how all types of risk affect the financial services industry and its regulations.

# 2. OVERVIEW OF FTA Masters ASSURANCE OF LEARNING PLAN

#

|  |  |  |
| --- | --- | --- |
|  | **Credits** | **Courses** |
| **FTA Masters** | 30 | 10 |

**School of Business Vision**

To be a leading business school widely recognized for superior technology-focused and student-centric educational programs and research.

**Masters of Financial Technology and Analytics (FTA) Vision**

To be recognized as a world-class program in Financial Technology and Analytics education and research.

The structure of the goals will remain the same across all programs:

* Soft Skills
	+ Goal 1 Will communicate effectively in writing and oral presentation
	+ Goal 2 Will be able to interact effectively in teams
* Critical thinking and integrative skills
	+ Goal 3 Will be able to formulate and articulate plans to align business and IT

We added several specific competencies, detail the indirect measures we use to assess the competencies and, how to track these when we discuss the goals in section 7.

**Table 1: Masers in FTA Competency goals**

|  |
| --- |
| **MS in Financial Technology and Analytics Competency goals** |
| FTA-1: Students can communicate effectively in written and oral presentations.  |
| FTA-2: Students can interact effectively in teams. |
| FTA-3: Students understand and can apply a broad range of business analytic techniques.  |
| FTA-4 Students will be able to develop predictive forecasts using historical data.  |

We added several specific competencies, detailed the indirect measures to assess

the competencies and, how to track these when we outline the goals in section 7.

# 3. FTA ASSURANCE OF LEARNING ASSESSMENT PLAN

Table 2: FA ASSURANCE OF LEARNING ASSESSMENT PLAN - GOALS 1 through 4

|  |  |  |  |
| --- | --- | --- | --- |
| COMPETENCY GOAL | Where and when measured? |  How measured? | Criterion  |
| 1. Students will communicate effectively in oral and written presentations.  | Assessed in the fall in FA582. Students submit a project proposal to be evaluated by CAL, and then are assessed in their final project presentations. | Student presentations are video taped; student essays are assessed by professionals in CAL. Feedback is provided to each individual student. Sampling: All students in the FA program are assessed. | For both the oral and written test, 80% of students must receive a grade of “A” or “B”. Students receiving “C” or “D” grades are required to take online remedial training. |
| 2. Students will be able to interact effectively in teams  | Assessed in the fall semester in required course *FA541 Applied Statistics with Applications in Finance* | Team performance questionnaires are administered online Sampling: All students in the FTA program are assessed. | 85% of the students get a grade of GOOD or better on the final project as measured by the rubric for this competency goal. |
| 3. Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports  | Assessed in the fall semester in FA582 Foundations of Financial Data Science | Evaluated based on performance in FA582 Sampling: All students in the FA program are assessed. | 85% of students get a grade of GOOD or better on the final project as measured by the rubric for this competency goal. |
| 4. Students will be able to develop predictive forecasts using historical data. | Assessed in the spring in FA542 Financial Time Series | Based on the students’ performance on homeworks and exams in the class. | 85% of students get a grade of Meets expectations or better on the final assessment. |

# 4. FTA CURRICULUM ALIGNMENT MAP

Table 3: FTA Curriculum Alignment Map – Goals 1 Through 4

| **Goals/****Required FA Courses** | **1: Students can communicate effectively in oral and written presentations.**  | **2: Students can interact effectively in teams** | **3: Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports** | **4. Students will be able to develop predictive forecasts using historical data.** |
| --- | --- | --- | --- | --- |
| FA582 Foundations of Financial Data Science | **Evaluated in this course** | Students work in teams for this course | The students’ performance over this entire class is used to evaluate Goal 3 |  |
| FE513 Financial Lab: Database Design | Paired with 582 | Paired with 582 | Paired with 582 |  |
| FA541 Applied Statistics with Applications in Finance | Students present group projects and provide a report | The team project in this class is the one used to assess Goal 2. | Download data as part of project | Provides necessary fundamental for this goal and develop some predictive models |
| FE535 Introduction to Financial Risk Management | Students provide market briefings as a team | Students provide market briefings as a team | Collect data using open API | Stress testing |
| FA590 Statistical Learning in Finance | Students submit reports for their assignments, which should be clear and concise |  | Students are required to collect a data set to run their final project on |  |
| FA542 Time Series with Applications to Finance |  |  | Download data as part of assignments | This is the course that this goal is evaluated in. |
| FA800 Project in Financial Analytics | Students are expected to write a report and present their work. | Students work in teams for this class | Utilizes all skills developed over the program | Utilizes all skills developed over the program |
| FA595 Financial Systems Technology | **Final report on the project** | Students work in teams on a final project | Run text mining algorithms as part of NLP |  |
| FA550 Data Visualization Applications | Individual projects |  | Collect data for the visualization |  |
| FA690 Machine Learning in Finance | Individual projects have a final report and presentation |  | Collect data | Predict using ML methods |
| FA646 Optimization Models and Methods in Finance |  |  |  | Optimization of models to improve predictive capabilities |
| MA575 Optimization Models in Quantitative Finance |  |  |  | Optimization of models to improve predictive capabilities |
| FA631 Investment, Portfolio Construction, and Trading Analytics |  |  |  |  |
| MA630 Advanced Optimization Methods |  |  |  | Optimization of models to improve predictive capabilities |
| MA661 Dynamic Programming and Reinforcement Learning |  |  |  | Optimization of models to improve predictive capabilities |
| MA662 Stochastic Optimization |  |  |  | Optimization of models to improve predictive capabilities |
| FE635 Financial Enterprise Risk Engineering |  |  |  | Apply forecasts to emerging markets |
| FA636 Advanced Financial Risk Analytics |  |  |  |  |
| FE511 Introduction to Bloomberg and Thomson Reuters |  |  |  A source for data sets | Used to find the data for time series analysis. |
| FE515 Introduction to R |  |  | Good for working on data sets | Useful to develop understanding of programming languages used for this goal |
| FE520 Introduction to Python for Financial Applications | Oral presentations at the end of the course |  | Necessary for implementing parts of this goal | Useful to develop understanding of programming languages used for this goal |

# 5. Ethics Thread

The FTA Masters Program also takes great effort to address the importance of Business Ethics. Throughout the program the following ethical concerns area addressed in nearly every class.

|  |  |
| --- | --- |
| **Goals/** | Students are aware of social responsibilities in a business environment and can reason about ethical issues. |
|  |  |
| **Responsible/Objective representation of data** | Making sure that the reports are objectively showing the truth instead of manipulating results to fit a desired narrative. |
| **Data Privacy** | Protecting confidential information and not exposing any one to undue risk |
| **Academic/Professional Integrity** | Citing other sources when used, only submitting your own work |

# 6. Global Thread

Another thread that runs through the FTA Masters Program are global considerations. Following is a chart that maps our courses to global coverage using the legend below.

Legend

 – Entirely Global Content

 – Significant parts are global

 – Some global content

|  |  |  |
| --- | --- | --- |
| Course | Legend | Notes |
| All courses  |  | Because companies studied and data collected is representative of multiple markets and countries, there is some global content in all courses |
| FE535, FE635 |  | Considers all directives such as BASEL-III |
| FA800 |  | Applications in multiple markets, including foreign markets. |

# 7. COMPETENCY GOALS, OBJECTIVES AND RUBRICS

Goal 1: Objectives and Traits

|  |
| --- |
| Competency goal 1: Communicate effectively in writing and oral presentations. |
| Competency goal 1 has 2 Objectives, as follows:  |
| Objective 1: | *Students will be able to write effectively.* |
| Traits |   |
| Trait 1: | Logical flow |
| Trait 2: | Grammar and sentence structure |
| Trait 3: | Spelling and word choice |
| Trait 4: | Development of ideas |
|  |   |
| Objective 2: | *Students will be able to deliver presentations effectively.* |
| Traits |   |
| Trait 1: | Organization and logic |
| Trait 2: | Voice quality |
| Trait 3: | Physical presence |
| Trait 4: | Use of slides to enhance communications |
| Trait 5: | Transitions/ Time Management/ Q/A |
|  |  |

Explanation for indirect measurements:

Indirect measurements will be taken at periodic intervals. The indirect measurement currently being implemented is exit interviews, which will be discussed in greater detail in section 9.

|  |  |
| --- | --- |
| Competency goal 1Rubric |  |
| BSB – 1 | Students can communicate effectively in writing and oral presentations |  |
| Objective 1: *Students will be able to write effectively*  |  |
|   | Trait | Poor | Good | Excellent |  |
|   | Value | 0 | 5 | 10 |  |
| Trait 1: | Logical flow | Unclear introduction or conclusion. Does not use a sequence of material to lead reader through the paper. Draws illogical conclusions | Develops ideas through effective use of paragraphs, transitions, opening and concluding statements. Generally well structured to suggest connection between sub-topics. | Maintains clear focus, uses structure to build the paper's conclusions. Presents analysis using sequence of ideas, clarity of flow and continuous voice or point of view. |  |
| Trait 2: | Grammar and sentence structure | Frequently uses inappropriate grammar and incomplete or poorly structured sentences which interfere with comprehension. | Generally complies with standard English and grammar and sentence usage. | Sophisticated use of English language, using varied sentence structured, phrasing and cadence. Grammar is error-free |  |
| Trait 3: | Spelling and word choice | Frequent misspellings. Poor or limited choice of words for expression ideas. | Has proofread or checked spelling, and uses vocabulary correctly. Minor errors. | Demonstrates good use of words to support written expression of topic. Spelling is error-free. |  |
| Trait 4: | Development of ideas | Many unsupported statements offered. Uses flawed or unclear reasoning. | Most statements supported, ideas explained with examples and written with sufficient explanation. | Shows thoughtful reasoning and explores alternatives. Uses existing, supported ideas to develop well-formed, readable output. |  |
| Criterion: | Does not meet expectations: 0 – 15; Meets: 16-30 ; Exceeds: 31-40  |  |
| Objective 2 | *Students will be able to deliver presentations effectively* |  |
|   | Trait | Poor | Good | Excellent |  |
|  | Value | 0 | 5 | 10 |  |
| Trait 1: | Organization and logic | Fails to introduce topic; no evidence of or poor logical flow of topic. | Prepares listeners for sequence and flow of topic. Loses place occasionally but flow and structure are still clear. | Engages listeners with overview, guides listeners through connections between sections, and alerts audience to key details and concepts.  |  |
| Trait 2: | Voice Quality | Cannot be heard or understood well due to volume, mumbling, speed, monotone delivery, and/or heavily accented English.  | Clear delivery with well-modulated voice. Displays some confidence and enthusiasm, but may also contain flatter periods or sound overly rehearsed. | Exemplary delivery, with a voice that sounds fully engaged, conveys enthusiasm and confidence, and relates to the audience well.  |  |
| Trait 3:  | Physical Presence | Turns away from audience or uses distracting gestures, such as pacing or tugging clothing. Speaker seems stiff, awkward or uncomfortable. Little eye contact. | Speaker is relaxed in front of the room and keeps distracting movements and gestures to a minimum. Generally faces audience and makes eye contact. | Speaker’s body language is superb and fully engages the room. Strong, consistent eye contact to the entire audience. Uses confident gestures to underscore key verbal points. |  |
| Trait 4: | Use of slides to enhance communications | Misspelled, too busy, too much text, too many slides for allotted time, and/or poor use of graphics like charts.  | Slides are readable, containing a reasonable amount of material per slide. Good use of graphics or illustrations. | Slides are well written/designed, engaging to the audience, and used as support to verbal content presentation. |  |
| Trait 5: | TransitionsTime ManagementQ&A | Transitions are awkward or non-existent. Speakers go over time limits. Answers are disorganized or non-responsive. | Transitions are smooth. Speakers generally stay within time limits. Speakers respond to questions well and provide sufficient response. | Transitions are professional and very smooth. Speakers respond convincingly and address all aspects of question. |  |
| Criterion: | Does not meet expectations: 0 – 19; Meets: 20-35 ; Exceeds: 36-50  |  |
|  |  |  |

COMPETENCY GOAL #2 – Goal and Objectives using the Automated Team Survey

See traits lower down

|  |
| --- |
|  Competency goal 2: Students can interact effectively in teams. |
| Objectives |  |
| Objective 1: | *Students will be able to facilitate task accomplishment within the context of project teams* |
| Objective 2: | *Students will be able to facilitate relationship building within the context of project teams.* |
|  |  |

In addition, there are specific competencies that are needed in teamwork that this goal will address. The skills that are targeted are task management skills, and relationship management skills. Task management skills include: clarifying roles and responsibilities of others; suggesting new approaches to solving problems; defining task priorities for work sessions and or projects. Relationship management skills include: working towards solutions and compromises that are acceptable to all involved; reinforcing the contributions of others; encouraging ideas and opinions even when they differ from his/her own.

Explanation for indirect measurements:

Indirect measurements will be taken at periodic intervals. The indirect measurement currently being implemented is exit interviews, which will be discussed in greater detail in section 9.

RUBRIC

Objective 1: *Students will be able to facilitate task accomplishment within the context of project teams*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Trait | Poor | Good | Excellent |
|   | Value | 0 | 5 | 10 |
| Trait 1: | Anticipates problems and develops contingency plans | Fails to suggest a direction and does not clarify responsibilities  | Suggests some form of direction for the team | Identifies ways to proceed or alternatives to pursue and clarifies roles and objectives |
| Trait 2: | Recognizes interrelationships among problems and issues | Fails to request information from the team | Makes an effort to request information from the team | Asks questions, analyzes knowledge gaps, requests opinions, beliefs and perspectives |
| Trait 3: | Suggests new approaches to solving problems | Fails to provide information needed | Provides some necessary information | Provides data, offers factors, and judgments and highlights conclusions  |
| Trait4 | Organizes information into meaningful categories | Does not expand on others ideas | Makes an effort to build on others' suggestions | Builds on ideas expressed by others; provides examples and illustrations |
| Trait5 | Helps others to draw conclusions from the facts | Fails to suggest to the team to stay focused on the team's task | Makes an effort to keep members focused on the task | Urges team members to stay on task and to achieve team goals |
| Trait6 | Defines task priorities for work sessions and or overall projects | Fails to monitor progress | Tries to check progress | Checks on progress, helps maintain accountability of results |
| Trait7 | Ensures that goals are understood by all | Provides no analysis of team processes | Makes an effort to analyze team processes | Analyzes process and procedures used by the team in order to improve efficiency and timeliness.  |
| Trait8 | Clarifies roles and responsibilities of others | Does not ground comments in reality | Makes an attempt to check whether ideas are grounded in reality | Explores whether ideas presented are practical or workable. |
| Trait9 | Reviews progress throughout work sessions/life of a project | Does not reinforce team rules | Tries to reinforce team agreed upon principles | Helps to reinforce team rules, and maintains agreed upon principles |
| Trait10 | Summarizes the team's position on issues | Fails to summarize points and conclusions reached, and does not clarify conclusions reached | Makes an effort to summarize points and clarify conclusions | Combines ideas; sums up points made; Helps members understand the conclusions reached. |

 Objective 2: *Students will be able to facilitate relationship building within the context of project teams.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Trait | Poor | Good | Excellent |
|   | Value | 0 | 5 | 10 |
| Trait 1: | Conveys interest in what others are saying | Fails to praise the contributions of others | Makes an effort to commend the ideas of others  | Praises the ideas of others, shows friendliness, and points out others' contributions |
| Trait 2: | Encourages ideas and opinions even when they differ from his/her own | Does not attempt to find common ground in conflicting points of view.  | Makes an effort to find common ground in disputes | Mediates differences between others and finds a common ground in disputes  |
| Trait 3: | Works towards solutions and compromises that are acceptable to all involved | Fails to motivate team members | Makes an attempt to energize team members | Motivates others towards greater effort |
| Trait4 | Shares credit for success with others | Fails to challenge disruptive behaviors  | Makes an effort to challenge uproductive behaviors | Challenges unproductive behaviors  |
| Trait5 | Cooperates with others | Fails to encourage solidarity  | Makes an effort to ensure proper team behavior | Encourages agreement and helps smooth interactions |
| Trait6 | Encourages participation among all participants | Fails to express empathy for team members  | Attempts to reflect group feelings | Expresses empathy and support for team members |
| Trait7 | Shares information with others | Reluctant to share information with team members | Occasionally disseminates information  | Regularly Shares information willingly with team members |
| Trait8 | Reinforces the contributions of others | Fails to reinforce other team members’ help  | Makes an effort to provide positive feedback following others’ assistance  | Reinforces the contributions of others |
| Trait9 | Involves others in decisions that affect them | Fails to include team members in decisions that will affect them | Makes an effort to involve other team members in decisions that will affect them | Gets team members involvement in decisions that will affect them |
| Trait10 | Encourages others to express their views even when they are contrary to his/her own | Discourages others’ constructive dissent. | Attempts to encourage others’ constructive disagreement. | Urges others’ to express contrary views. |

COMPETENCY GOAL # 3: Objectives and Traits

|  |
| --- |
| Competency goal 3: Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports  |
| Objective 1: *Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports.* |
| Traits |   |
| Trait 1: | The student can properly collect and clean a data set |
| Trait 2: | The student is able to analyze a data set for key traits |
| Trait 3: | The student can generate a report on a complete data set describing the methods used to clean and analyze the data, as well as any notable results. |

Explanation for indirect measurements:

Indirect measurements will be taken at periodic intervals. The indirect measurement currently being implemented is exit interviews, which will be discussed in greater detail in section 9.

RUBRICS

|  |
| --- |
| Objective 1: *Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports.* |
|   | Trait | Poor | Good | Excellent | Score |
|   | Value | 0 | 5 | 10 |   |
| Trait 1: | The student can properly collect and clean a data set | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Trait 2: | The student is able to analyze a data set for key traits | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Trait 3: | The student can generate a report on a complete data set describing the methods used to clean and analyze the data, as well as any notable results. | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Criterion: Score below 15 is “below expectations”; between 15 and 25 is “meets expectations”; and greater than 25 is “exceeds expectations”. |

COMPETENCY GOAL # 4: Objectives and Traits

|  |
| --- |
| Competency goal 4: Students will be able to develop predictive forecasts using historical data. |
| Objective 1: *Students will be able to calibrate models based on historical data* |
| Traits |   |
| Trait 1: | Calibrate models based on ARMA models |
| Trait 2: | Calibrate models based on ARCH models (ARCH, GARCH, etc.) |
| Objective 2: *Students will be able to create a forecast using established parameters.* |
| Traits |   |
| Trait 1: | Develop the mean forecast |
| Trait 2: | Develop the standard error of the forecast |

Explanation for indirect measurements:

Indirect measurements will be taken at periodic intervals. The indirect measurement currently being implemented is exit interviews, which will be discussed in greater detail in section 9.

RUBRICS

|  |  |
| --- | --- |
| Objective 1 | *Students will be able to calibrate models based on historical data* |
|   | Trait | Poor | Good | Excellent |  |
|   | Value | 0 | 5 | 10 |   |
| Trait 1: | Calibrate models based on ARMA models | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Trait 2: | Calibrate models based on ARCH models (ARCH, GARCH, etc.) | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Objective 2 | *Students will be able to create a forecast using established parameters.* |
|   | Trait | Poor | Good | Excellent |  |
|   | Value | 0 | 5 | 10 |   |
| Trait 1: | Develop the mean forecast | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |
| Trait 2: | Develop the standard error of the forecast | Limited command of techniques used in this area | Good command of techniques used in this area | Strong command of techniques used in this area |   |

Criterion: Score below 20 is “below expectations”; between 20 and 30 is “meets expectations”; and greater than 30 is “exceeds expectations


# 8. RESULTS OF AACSB COMPETENCY GOAL ASSESSMENTS

The results of the initial competency goal assessments carried out to date are included below.

**Explanation**

Each competency goal has a number of learning objectives and performance on each objective is measured using a rubric that in turn contains a number of desired “traits”. Students are scored individually on each trait.

The grading sheets for each student are used to develop a Summary Results Sheet for each competency goal objective. A selection of these Summaries is included below.

The first table in the Summary Results Sheet for a learning objective and trait gives the counts of students falling in each of the three categories:

- Does not meet expectations
- Meets expectations
- Exceeds expectations

The right-hand column in the table is used to record the average score of the students on each trait. This table provides an indication of the relative performance of students on each trait.

The second table on each sheet provides the counts of students who fall in each of the above three categories for the overall learning objective.

The person doing the assessment provides explanatory comments and recommendations on the bottom of the Results Summary Sheet. The recommendations suggest content or pedagogy changes for the next time the course is given.

**Additionally, as described above,** indirect measurements will be taken at periodic intervals for all goals. Indirect measurements will be taken at periodic intervals. The indirect measurement currently being implemented is exit interviews, which will be discussed in greater detail in section 9.

**School of Business**

**RESULTS OF AACSB COMPETENCY GOAL Direct ASSESSMENT**

**Here the results for Fall 2022 will appear by competency goal for example:**

 **COMPETENCY GOAL #1:***Our students will communicate effectively in written and oral communications.*

**LEARNING OBJECTIVE #1:***Students will be able to write effectively.*

**ASSESSMENT DATE:**

**ASSESSOR:**

**NUMBER OF STUDENTS & COURSE:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** | **Average Grade** |
| 1: Logical flow |  |  |  |  |
| 2: Grammar & Sentence Structure |  |  |  |  |
| 3: Spelling & word choice |  |  |  |  |
| 4: Development of ideas |  |  |  |  |
| **Average Grade (Out of 10) =** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** |
| **Total Students by Category***(Based on average score across all traits)* |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**LEARNING OBJECTIVE #2:***Students will be able to deliver presentations effectively.*

**ASSESSMENT DATE:**

**ASSESSOR:**

**NUMBER OF STUDENTS & COURSE:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** | **Average Grade** |
| 1: Organization & Logic |  |  |  |  |
| 2: Voice Quality |  |  |  |  |
| 3: Physical Presence |  |  |  |  |
| 4: Use of Slides to Enhance Comm |  |  |  |  |
| 5: Transitions, Time Mgt, Q&A |  |  |  |  |
| **Average Grade (Out of 10) =** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** |
| **Total Students by Category***(Based on average score across all traits)* |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**COMPETENCY GOAL #: 2 Our students will interact effectively in teams.**

**LEARNING OBJECTIVE # 1:** *Students will be able to facilitate task accomplishment (team leadership) within the context of project teams*

**ASSESSMENT DATE: ASSESSOR:**

**NO. OF STUDENTS TESTED: Course:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations**  | **Meet Expectations**  | **Exceed Expectations**  | **Avg. Grade**  |
| 1. Anticipates problems and develops contingency plans |  |  |  |  |
| 2. Recognizes interrelationships among problems and issues |  |  |  |  |
| 3. Suggests new approaches to solving problems |  |  |  |  |
| 4. Organizes information into meaningful categories |  |  |  |  |
| 5. Helps others to draw conclusions from the facts |  |  |  |  |
| 6. Defines task priorities for work sessions and or overall projects |  |  |  |  |
| 7. Ensures that goals are understood by all |  |  |  |  |
| 8. Clarifies roles and responsibilities of others |  |  |  |  |
| 9. Reviews progress throughout work sessions/life of a project |  |  |  |  |
| 10. Summarizes the team's position on issues |  |  |  |  |
| **Average Grade (Maximum 5)** |  |
|  | **Not Meet Expectations**  | **Meet Expectations**  | **Exceed Expectations**  |  |
| **Total Students by Category** (Based on Average score across all traits) |  |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**LEARNING OBJECTIVE # 2:** *Students will be able to facilitate relationship building (team facilitation) within the context of project teams.*

**ASSESSMENT DATE: ASSESSOR:**

**NO. OF STUDENTS TESTED: Course:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meet Expectations** | **Exceed Expectations** | **Avg. Grade on Trait** |
| 1. Conveys interest in what others are saying |  |  |  |  |
| 2. Encourages ideas and opinions even when they differ from his/her own |  |  |  |  |
| 3. Works towards solutions and compromises that are acceptable to all involved |  |  |  |  |
| 4. Shares credit for success with others |  |  |  |  |
| 5. Cooperates with others |  |  |  |  |
| 6. Encourages participation among all participants |  |  |  |  |
| 7. Shares information with others |  |  |  |  |
| 8. Reinforces the contributions of others |  |  |  |  |
| 9. Involves others in decisions that affect them |  |  |  |  |
| 10. Encourages others to express their views even when they are contrary to his/her own |  |  |  |  |
| **Average Grade (Maximum 5)** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not Meet Expectations**  | **Meet Expectations**  | **Exceed Expectations**  |
| **Total Students by Category** |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**COMPETENCY GOAL #3:** Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports.

**LEARNING OBJECTIVE # 1:** *Students will be able to collect, clean and perform exploratory analysis on data sets and apply data mining methods to generate reports.*

**ASSESSMENT DATE: ASSESSOR:**

**NO. of Students Evaluated: COURSE:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Teams** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meet Expectations** | **Exceed Expectations** | **Avg. Grade on Trait** |
| The student can perform data collection, data cleaning, data transformation, feature selection and exploratory data analysis. |  |  |  |  |
| The student is able to perform data analysis through a subset of data mining techniques. |  |  |  |  |
| The student can generate a report on a complete data set describing the methods used to clean and analyze the data, as well as any notable results. |  |  |  |  |
| **Average Grade (Maximum 10)** |  |

1. **Does not meet expectations: 0 – 7.49; Meets: 7.5-9.49; Exceeds: 9.50-10.00**

|  |  |  |  |
| --- | --- | --- | --- |
|   | **Not meet Expectations** | **Meets Expectations** | **Exceeds Expectations** |
| **Total Students by Category***(Based on Average score across all traits)* |  |  |  |
| **Students meeting or exceeding expectations:** |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**COMPETENCY GOAL #4:**
*Students will be able to develop predictive forecasts using historical data.*

**LEARNING OBJECTIVE #1:**
*Students will be able to calibrate models based on historical data*

**ASSESSMENT DATE:**

**ASSESSOR:**

**NUMBER OF STUDENTS:
COURSE:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** | **Average Grade** |
| 1: Calibrate models based on ARMA models |  |  |  |  |
| 2: Calibrate models based on ARCH models (ARCH, GARCH, etc.) |  |  |  |  |
| **Average Grade (Out of 10) =** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** |
| **Total Students by Category***(Based on average score across all traits)* |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

**LEARNING OBJECTIVE #2:**
*Students will be able to create a forecast using established parameters.*

**ASSESSMENT DATE:**

**ASSESSOR:**

**NUMBER OF STUDENTS:**

**COURSE:**

|  |  |  |
| --- | --- | --- |
|  | **Number of Students** |  |
| **Competency goal Traits** | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** | **Average Grade** |
| 1: Develop the mean forecast |  |  |  |  |
| 2: Develop the standard error of the forecast |  |  |  |  |
| **Average Grade (Out of 10) =** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not Meet Expectations** | **Meets Expectations** | **Exceeds Expectations** |
| **Total Students by Category***(Based on average score across all traits)* |  |  |  |

**COMMENTS**

**REMEDIAL ACTIONS:**

# 9. Indirect Measurements

*Indirect Measurements:*

* Currently we are using exit interviews, collected from the QF students who have graduated in the last year.

*How we use them in our programs:*

* Assessing the students’ experiences at Stevens
* Allow for a rating of satisfaction with the various aspects of the program
* Determine any deficiencies in the coursework, from their viewpoint
* Determine average compensation of our graduates

# 10. Competencies

1. The Corporate Outreach and Professional Advancement team (COPA) provide tools such as 12Twenty, which record placement outcomes for our students. These reports are enabling us to understand the roles our students take after graduation which enhance our understanding of core competencies
2. We publicize the employment rate and starting salary of our students
3. We highlight exemplary students with awards for academic achievement and for commitment to leadership and service
4. Success in the CFA and FRM exams that our students take, which is a result of studying in our programs. The best students are selected for scholarships in these exams

# 11. Engagement, Innovation, and Impact

* Engagement
	+ We engage graduate students with graduate assistantships, where they organize events, contact incoming students, and work on other tasks
	+ We engage current students in clubs, such as the Stevens Graduate Finance Association, and Stevens Women in Business
	+ Capstone projects, such as the FE 800 industry projects and the Integrated Capstone Experience
	+ Faculty meetings: we engage faculty in curriculum development, revamping, and enhancements
	+ Finance Board Members: we engage them in curriculum development by regularly seeking their input to curriculum initiatives we are undertaking
* Innovation
	+ Lab courses: they provide skills to incoming students and ensure the graduates are better positioned to compete for jobs; they are offered across all three financial programs
	+ Having Ph.D. students help develop practical problems that test the skills learned in classes
	+ The revamped MFA program has now concentrations providing students with skills that better respond to the needs of the industry
* Impact
	+ Outcomes: We enhance student skills to get better jobs and positively contribute to economy and society
	+ Business School Rankings: improvement through the year because of our efforts
	+ Our Sustainability Offering: this ensures that students are informed about ways to better society
	+ By being responsible for capstone projects/masters thesis, our students will gain skills in doing independent research. In addition, they will learn how best to effectively convey their ideas to an audience.
	+ Through teamwork, they learn collaborative practices.
	+ The analytical skills our students learn will allow them to excel in their given fields, as we have prepared them to be able to handle all sorts of situations. Their math and computer science skills translate to working in the quantitative finance domain.