

The logo for the Financial Trading System (FTS) features the words "FINANCIAL", "TRADING", and "SYSTEM" stacked vertically. "FINANCIAL" and "SYSTEM" are in a white, serif font, while "TRADING" is in a yellow, serif font. The text is set against a blue background with a faint, grid-like pattern of lines.

The Financial Trading System (FTS) is a suite of software tools and teaching material for integrating trading simulations into high school and university courses in finance, accounting, and economics. FTS software helped create the first educational trading room, the “FAST Lab” at Carnegie Mellon University in the early 1990’s; these efforts were recognized in 1996 when the Smithsonian Institution's Museum of American History made the progressive work of the FAST Lab part of its permanent research collection. Today, the system provides the most comprehensive solution available for university trading rooms as well as for those who want to employ realistic and real world simulations in their curriculum.

For those who have built or are building trading rooms, it is critically important to develop a strategy for integrating the trading rooms into the curriculum. The investment in such rooms is typically large, and while a trading room can be a showpiece and demonstrate a commitment to technology and real-world education, the effective use of such rooms can be limited by several factors. The foremost is faculty training and a willingness to adapt newer methods into their classes. Another is technical support that makes widespread usage feasible. The investment is hard to justify if either a very small number of students benefits from it or if it becomes resource that just “sits there” and is essentially a computer lab with flashy displays<sup>1</sup>.

FTS has a broad range of applications, and is used to teach courses in finance, accounting, and economics. Our goal is to link what is taught in standard courses, taken by most students, to real world markets so that all the students see and experience how the concepts they learn are applied and used in the real world. While you can use the system to run specialized courses on trading or market microstructure, our focus and the applicability of the system is much broader.

As a result, FTS is used by schools that have built trading rooms and by schools that have not. It is used for in-class trading exercises as well as by online and distance learning students. Our software was developed by professors for teaching and we place a large emphasis on faculty training. This training is done by professors who have used the system, not by system developers or programmers. Such training

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<sup>1</sup> For a discussion of some of the issues surrounding trading rooms, see the BizEd article available at <http://www.aacsb.edu/publications/archives/jan03/p22-27.pdf>

typically takes place over several sessions, and includes feedback on course outlines and syllabi (partly to make sure that what is required of students is feasible). With this approach, labor intensive though it is, we have successfully helped many schools with curriculum integration.

The system consists of:

- The **FTS Real-Time System**, where students manage the risk and return of positions of real-world securities at real-time prices. The analytical support system provides a powerful integration of textbook theory, the internet and practice. The analytics are completely customizable by each student and student teams can work in real time on the same position from any location. We provide detailed step-by-step exercises to structure the learning.
- The **FTS Interactive Markets** where students trade with each other in specially designed trading cases that tie a central function of markets, price discovery, to the concept being taught. The trading cases range from a simple introduction to financial markets and instruments to advanced cases focusing on risk management. It is fairly easy to design your own cases.
- The **FTS Experimental Research System**
  - The FTS Interactive Market System was originally created to conduct experimental research, and continues to serve this purpose. Our web site provides links to several published papers based on this system.
  - In addition, we provide a generic framework for conducting other types of experiments, including auctions, surveys, behavioral experiments, and so on.
- The **FTS Modules**
  - The FTS Modules are “stand alone” teaching tools that can use information available on the internet and allow students to analyze real world problems.
  - The FTS Valuation Module is the most innovative tool available today for teaching company valuation using fundamental information.
- The **FTS Display System** which you can use for display purposes, in trading rooms, lounges, or anywhere a fully customizable display is desired.
  - You can display world and national news, financial market information, sports and entertainment information, as well as information specific to your school or department.
  - We supply standard tickers, and can also show you how to create your own.
- **FTS Instructional Support** provides academic instruction on how to use the system effectively in the classroom in any finance or related course.
  - Our system was designed by Professors John O’Brien and Sanjay Srivastava, and they continue to be deeply involved in sharing their teaching and research experiences over the past twenty years.

### Teaching Uses

- The **FTS Real Time System**
  - The most common use is a team-based project where the instructor sets the objectives for the teams (usually a combination of risk and return) in applications that include modern portfolio theory, valuation, risk management, financial engineering, delta

hedging, and even competitive day trading, over some period of time that can range from one class to a whole semester.

- We offer list of project suggestions and will work with you to customize your syllabi to integrate this system into your courses.
- We eliminate the complexity of a real-time project by running the back office for you: managing the data feeds, data servers, etc. Our current offerings are posted on our web site.
- The system can also used for short-term course, particularly in executive education, or as an introduction to markets and trading.
- **The FTS Interactive Markets**
  - These are short in-class trading sessions, where your teaching objectives are tied to the price discovery problem. The students trade a small number of securities, with repeated trading trials to facilitate learning the teaching objectives.
  - We provide over thirty trading cases, with teaching guides, solutions, etc.
    - The cases cover fixed income (time value of money), stocks (diversification and CAPM), derivatives (options, futures), currencies (risk, parity relationships), and risk management (swaps, caps, floors, etc.)
    - New cases are easy to design, and we will create them for you if you tell us what you want.
- **The FTS Modules**
  - These are calculation tools. They include
    - The *valuation* module lets you conduct an entire valuation course in a new and exciting way
    - The *efficient* portfolio modules
      - These compute statistical properties of historical returns, as well as efficient frontiers with either a factor structure or a full covariance matrix.
    - The *fixed income* modules
      - These range from simple Treasury calculations to bond immunization modules to more advanced features like principal components analysis on the historical term structure.
    - The *options and futures* modules
      - Several of these are pure tutorials, which help students grasp fundamental principles of valuation and hedging with derivatives.