

**Tenure Track Position –Assistant Professor in Engineering  
Tagliatela College of Engineering - University of New Haven  
Teaching and Engineering Education Research**

The Tagliatela College of Engineering (TCoE) at the University of New Haven (UNH) has an open tenure track position for an engineering faculty member with a focus on teaching and engineering education research. A non-tenure-track appointment can be considered, if appropriate. This is an excellent opportunity for someone with a strong interest in teaching and pedagogical research to work with like-minded faculty across the spectrum of engineering disciplines delivering a unique, innovative curriculum.

The college offers ABET accredited bachelor degree programs in Chemical, Civil, Computer, Electrical and Mechanical Engineering; a newly developed program in System Engineering and a General Engineering program. In addition, the college houses programs in Computer Science (ABET accredited), Information Technology and Chemistry. Master Degree programs are also offered in Computer Science, Electrical and Computer Engineering, Environmental Engineering, Industrial Engineering and Mechanical Engineering. The University of New Haven is a comprehensive university offering a wide variety of programs through its 4 academic colleges: Arts & Sciences; Business, Engineering and Forensic Science & Criminal Justice.

The engineering programs in TCoE were recently redesigned to address the challenges posed in documents such as “The Engineer of 2020”. All the degree programs are built on our **Multidisciplinary Engineering Foundation Spiral Curriculum (MEFSC)**, a series of multidisciplinary 1<sup>st</sup> and 2<sup>nd</sup> year courses designed to develop a broad understanding of basic engineering concepts while simultaneously developing professional skills. This unique integrated curriculum, in effect since September 2004, draws from the work of the Engineering Coalitions, particularly the Foundation Coalition, and implements many new pedagogical models. Multidisciplinary teams of faculty developed and teach the courses. Early development work was partially funded by the National Science Foundation. The curriculum and related topics have been presented in 16 papers at ASEE National Meetings over the past 5 years.

Teaching and scholarship in engineering education are highly valued by both faculty and administration of the Tagliatela College of Engineering. Such work, with appropriate publications, is considered to be appropriate scholarly activity for purposes of tenure and promotion. While we do not have a department of engineering education, we are very interested in developing a center and involving a larger fraction of faculty in such activity. We have also established ties with our Education Department to enhance our activities in this area. The 1<sup>st</sup> and 2<sup>nd</sup> year classes in the MEFSC include students from all engineering disciplines and typically result in multiple sections of each course. This provides a great opportunity, or laboratory, for engineering education research.

Starting date for the position will be during the summer of 2009, although a January starting date could also be considered. If you have questions about the position or our programs, please contact Michael Collura via email: [mcollura@newhaven.edu](mailto:mcollura@newhaven.edu).

The text below shows the ad as posted in Prism (Oct 2008):

Tagliatela College of Engineering – Assistant Professor of Engineering

The Tagliatela College of Engineering at the University of New Haven invites applications for an assistant professor with a preferred starting date of January 2009. Tenure track applicants preferred; A.B.D. and non-tenure track considered. The successful candidate will teach and assess courses in our Multidisciplinary Engineering Foundation Spiral Curriculum (see web site for details: <http://www.newhaven.edu/9454/>) – a unique set of multidisciplinary courses taken by students in all engineering majors during their first 2 years. In particular, we seek a candidate with the background and expertise to lead the continued development and assessment of our unique integrated curriculum model.

Qualifications include: a BS and MS in an engineering discipline or closely related area, which complements our existing programs. For a tenure track appointment a PhD in Engineering Education, Engineering or a closely related field which provides a strong background in curriculum development, assessment techniques and engineering education research methods; and teaching experience at the Undergraduate level. Industrial experience is considered a strong asset for this position.

Responsibilities include teaching first and second year multidisciplinary engineering courses, program assessment, conducting engineering education research and involvement in recruiting activities. Specific duties will be tailored to the strengths and interests of the successful candidate and may include teaching upper-level or graduate courses in a particular engineering discipline and involvement with our newly created Engineering and Science University Magnet School.

Mail cover letter and resume to Search # 08-60 University of New Haven, 300 Boston post Road, West Haven, CT 06516 or via email to [hrdept@newhaven.edu](mailto:hrdept@newhaven.edu). Recommendation letters should be sent directly to the same address by three references. Applications will be reviewed as received until the position is filled.



University of New Haven  
Tagliatela College of Engineering



**Papers presented at national meetings of the American Society for Engineering Education**

**ASEE 2008 National Conference & Exposition**

**How Accurate Is Students' Self-Assessment Of Computer Skills?** Session 2439, by *Collura, Michael; Daniels, Samuel*

**ASEE 2007 National Conference & Exposition**

**"The Current Generation of Integrated Engineering Curriculum"**, Innovations in Teaching and Learning, Session 1430, by *Collura, Michael; Daniels, Samuel; Harding, W. David; Nocito-Gobel, Jean*

**"A Hybrid First-Year Science Course for Engineering Students – Integrating Biology with Chemistry"**, Multidisciplinary Experiences, Session 3553, By *Harding, W. David; Koutsospyros, Agamemnon; Nocito-Gobel, Jean; Schwartz, Pauline*

**"Civil and Mechanical Engineering Students Learning Mechanics in a Multidisciplinary Engineering Foundation Spiral"**, Innovative Mechanics Education Programs and Projects, Session 1430, By *Broderick, Gregory; Collura, Michael; Daniels, Samuel; Nocito-Gobel, Jean; Stanley, Richard*

**ASEE 2006 National Conference & Exposition**

**"A Multidisciplinary Modeling Course as a Foundation for Study of an Engineering Discipline"**, Emerging Trends in Engineering Education, Session 1693, by *Collura, Harding, Nocito-Gobel, Daniels*

**ASEE 2005 National Conference & Exposition**

Curriculum Reform Team Papers

**"Introducing feedback control to first year engineering students using LabVIEW"**, Emerging Trends in Engineering Education, Session 1793, by *Collura, Harding, Nocito-Gobel, Daniels*

**"Are Attitudes Toward Engineering Influenced by a Project-Based Introductory Course?"**, Emerging Trends in Engineering Education, Session 1793, by *Collura, Harding, Nocito-Gobel, Daniels*

**"Adapting a Traditional Chemical Engineering program to Follow a Multidisciplinary Engineering Foundation Spiral"**, Curriculum and Assessment in ChE, Session 3613, by *Collura, Harding, Nocito-Gobel, Daniels*

**ASEE 2004 National Conference & Exposition**

**"Learning the Methods of Engineering Analysis Using Case Studies, Excel, and VBA"**, Computers in Education: Session 1520, by *Collura, Aliane, Nocito-Gobel, Daniels*

**"Project-Based Introduction to Engineering - A University Core Course"**, Technological Literacy: Session 1661, by *Collura, Aliane, Nocito-Gobel, Daniels*

**"Project-Based Introduction to Engineering – Course Assessment "**, Emerging Trends in Engr Education: Session 1793, by *Collura, Aliane, Nocito-Gobel, Daniels*

**"Development of a Multidisciplinary Engineering Foundation Spiral"**, Curricular Change Issues: Session 2630, by *Collura, Aliane, Nocito-Gobel, Daniels*

**"Project Planning & Development for Engineering Freshman"**, Freshman Programs: Session 3153, by *Collura, Aliane, Nocito-Gobel, Daniels*

Our sincere thanks to the National Science Foundation for funding the initial development of this curriculum.



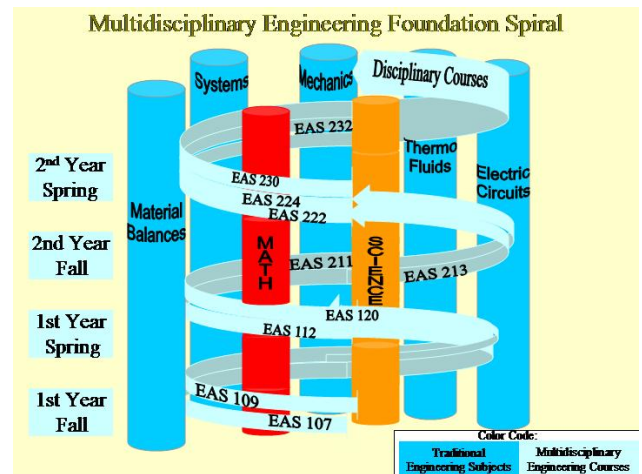
## University of New Haven Curriculum Reform Team

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### Multidisciplinary Engineering Foundation Spiral Courses FRESHMAN YEAR

**EAS107P Introduction to Engineering** Project-based overview of the problems, perspectives, and methods of the engineering profession. Modeling of real-world problems for purposes of optimization, decision-making, and design. Practical techniques of problem formulation and analysis. Projects include: Bridges, Solid Modeling, Fuel Cells and Mobile Robotics.

**EAS 109 Project Planning and Development** Students develop the skills required to successfully plan and implement selected projects within budgetary and time constraints using project management techniques & software. Projects use LabVIEW® programming for data acquisition and control and CAD tools and presentation software for technical communication of design information. Students gain proficiency in each of these three areas as they are applied to a series of projects spanning the course.

**EAS 112 Methods of Engineering Analysis** Students will be introduced to typical problems encountered in various branches of engineering using a case-study approach. They will gain experience using computer tools to solve these problems numerically. Skill will be developed in a spreadsheet environment, and the fundamentals of programming will be presented. Applications involve use descriptive statistics, regression, interpolation, logical and numerical functions, sets of algebraic, differential, and finite difference equations, integration. Students are introduced to data types, assignment and conditional statements, program flow control, passing parameters, returning values with functions, arrays.

**EAS 120 Chemistry with Applications to Biosystems** Integrated concepts from chemical and life sciences including solutions, equilibrium, kinetics, thermodynamics, and electrochemistry. Extensive laboratory component illustrates the interaction between chemical and biological processes.

### SOPHOMORE YEAR

**EAS 211 Introduction to Modeling of Engineering Systems** Modeling of simple engineering systems from different fields using empirical laws and the balance principle for mass, charge, linear momentum, and energy. Applications include introductory problems in material balances, electric circuits, fluid mechanics, statics, thermodynamics and heat transfer. Emphasis is on developing an engineering approach to problem-solving.

**EAS 213 Materials in Engineering Systems** Properties, behavior and application of materials (solid, liquid, and gas) are studied and demonstrated, with emphasis on selection and use in engineering systems. Topics include mechanical, electrical, magnetic, thermal, optical, rheological, and chemical properties and behavior.

**EAS 222 Fundamentals of Mechanics and Materials** Behavior of mechanical and structural systems under load. Topics include effects and distribution of forces on rigid bodies at rest; kinematics and kinetics of particles; force systems; shear and moment diagrams; force-stress-strain-deformation relationships, including torsion and combined loading; buckling and stability analysis; stress/strain transformation; Mohr's circle.

**EAS 224 Fluid-Thermal Systems** An expansive study of thermal and fluids principles and applications including laws of thermodynamics, basic power cycles, conservation laws, internal and external flows, and convective heat transfer.

**EAS 230 Fundamentals and Applications of Analog Devices** Fundamental principles of analog electrical devices as applied to a variety of engineering systems, as well as hands-on experience on those devices as applied in various engineering disciplines. Applications include sensors, transformers, motors, and transmission lines.

**EAS 232 Project Management and Engineering Economics** An introduction to economic analysis with emphasis on those concepts directly related to project management. Topics include analysis of alternatives, project initiation, depreciation and taxation, cost estimates, risk and uncertainty, project planning, execution, and control.