ITS 102 First-Year Seminars

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ITS 102.1: Fractal Design: A Technology for Fashion, Art and Culture
Meeting Pattern: TU 12:50PM-1:45PM
Location: Center for Information and Technology Studies A04 (Gray College)

Fractal geometry has become an exciting frontier bordering between mathematics and information technology and has impacts in many aspects of society such as fashion design, art and culture. Fractals are characterized by the repetition of similar patterns at ever-diminishing scales. In this course, an overview of various fractal geometries such as scaling fractals, non-scaling fractals, self-mapping fractals along with the various properties of fractals will be presented. The applications of fractal geometry in fashion design, movie industry, and artistic expression will be explored. The evidence of fractal design in various cultures such as African, Celtic, Chinese, Ukrainian, and Maori will be covered. A project in which students design simple fractal geometry in various applications is required.

Wendy Tang, *Electrical and Computer Engineering* Wendy Tang is an Associate Professor at the Department of Electrical and Computer Engineering in Stony Brook University. She received her B.S., M.S. and Ph. D in Electrical Engineering from the University of Rochester. Her current research interests are in Wireless Sensor Networks, Communication Networks and Graph Theory Applications. Her research effort is supported by the National Science Foundation. She and her colleagues are the recipients of two best paper awards in 1997 and 1998. She is also an accomplished educator who has dedicated considerable efforts in promoting entrepreneurship in engineering education and increasing women students in engineering. Her dedication in promoting women in engineering was recognized by an IEEE Region 1 Award in 1998, an IEEE Regional Activity Board Achievement Award also in 1998 and an IEEE Third Millennium Medal Award in 2000. In 2006, the IEEE Long Island Section awarded Dr. Tang and her colleague, Dr. Serge Luryi, the Athanasios Papoulis Education Award for their pioneering contributions in incorporating entrepreneurship in engineering education. She is currently the Project Director for the National Science Foundation funded Project EXCE2L (Excellence in Computer Education with Entrepreneurship and Leadership skills) with a goal of enriching engineering curricula in general and computer engineering curriculum in particular through the incorporation of entrepreneurial and leadership skills.

As the new Faculty Director for the Information and Technology Studies (ITS) College, her goal is to continue the vision of the College to emphasize how information and technology impact our daily lives in different aspects such as personal development, arts, sciences, communications, global impacts and culture.

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ITS 102.2: Nanotechnology: Fact and Fiction
Meeting Pattern: TU 2:20PM-3:15PM
Location: Center for Information and Technology Studies A03 (Gray College)

Nanotechnology is the research, design and manufacture of functional materials or devices which rely on the unique properties materials have at a size scale of a few billionths to a few tenths of a millionth of a meter. Nanotechnology has not only begun to open new doors for engineering solutions, but has also been a major plot device for science fiction over the last thirty or so years. We will examine nanotechnology from the point of view of science fiction, and contrast that with the science, technology, risks and promise of nanotech research today.

Gary Halada, *Materials Science and Engineering* Gary Halada is an associate professor in the Department of Materials Science and Engineering. He is the Undergraduate program Director for the Engineering Science (ESG) degree program, as well as coordinator of the Minors in Nanotechnology Studies (NTS) and Environmental Engineering (ENE). A graduate of Stony Brook University, Dr. Halada is a past faculty director for the Undergraduate College of Information and Technology Studies (ITS). His research focuses on designing bio-inspired materials for environmental remediation and nanoscale engineering.

ITS 102 First-Year Seminars

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ITS 102.3: Energy and Technology
Meeting Pattern: F 9:35AM-10:30AM
Location: Engineering Building 112

In this ITS102 course, students will have an opportunity to conduct research and perform analysis on various topics of energy and technology. This will be a guided study in which you will interact with the professor directly to choose the topic, conduct study and literature survey, and put together a professional presentation on the topic of your choice. Issues and case studies include topics in "Energy and Technology" pertaining to: environment, daily life, transportation, power plant, energy production, energy consumption, reserve on earth, carbon sequestration, drinking water, biosystem, biodiversity, … etc. Students are expected to produce a video podcast presentation, as the term project, to document and present their research finding on a chosen topic.

**Imin Kao,** *Mechanical Engineering*
Imin Kao is a Professor in the Department of Mechanical Engineering, and currently an Associate Dean of the College of Engineering and Applied Sciences (CEAS). He was the Founding Faculty Director of the ITS College.

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ITS 102.4: Nanomedicine
Meeting Pattern: TU 11:20AM-12:15PM
Location: Bioengineering Building 202

Recent advances in the field of nanotechnology have made major medical breakthroughs. They have been possible because scientists with vastly divergent areas of expertise have worked together in a cooperative and integrative manner. The challenge new scientists face is to communicate effectively with those of varied disciplines, both teaching their expertise, and learning that of others. This course both explores the fundamental nano-science behind these breakthroughs, and examines the communication challenges we all face to foster further scientific discovery at the nano-scale.
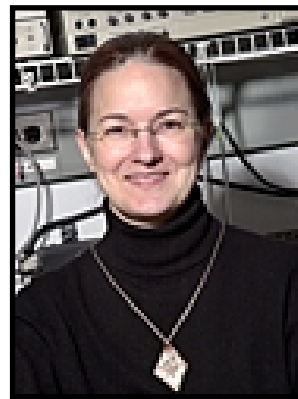
Mary Frame McMahon,
Biomedical Engineering
Dr. Frame is the Director of the Undergraduate Program in BME at Stony Brook. She has been faculty at SBU since 2002. Her research area of expertise is microfluidics both in vivo and in fabricated microchannels.

ITS 102 First-Year Seminars

ITS 102.5: Mathematical Puzzles
Meeting Pattern: W 10:40AM-11:35AM
Location: Physics P116

This seminar studies a collection of diverse mathematical puzzles.

Alan Tucker, *Applied Mathematics and Statistics* Alan Tucker is Distinguished Teaching Professor of Applied Mathematics & Statistics. He has been at Stony Brook unit 1970 and served for the last 20 years as ApMath Director of Undergraduate Studies

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ITS 102.6: Visualize This!
Meeting Pattern: W 3:50PM-4:45PM
Location: Irving College 180

Over 50% of the brain is dedicated to the processing of visual information, including the abstract visual representation of non-visual concepts. Visualization is the gateway to deeper and more complex structures in the brain, such as those dedicated to reasoning and creative problem solving, which are still hard to replicate on machines. This seminar will give an overview of the effective use of visualization in fields as diverse as medicine, science, engineering, biology, and business. It will also investigate, in simple terms and highly visual, some of the specific graphics algorithmic techniques and concepts in use, and it will discuss what's behind today's popular graphics boards and how they can be used in more "serious" applications. Finally, it will explore issues in human visual perception, computer vision, and the physics of image generation.

Klaus Mueller, *Computer Science* Klaus Mueller received the MS degree in biomedical engineering in 1991 and the PhD degree in computer science in 1998, both from The Ohio State University. He is currently an associate professor in the Computer Science Department at Stony Brook University, where he also holds co-appointments in the Biomedical Engineering and Radiology Departments. His current research interests are computer and volume graphics, visualization, visual analytics, medical imaging and computer vision. He won the US National Science Foundation CAREER award in 2001 and has served as a co-chair at various conferences, such IEEE Visualization, Volume Graphics Symposium, and the Fully 3D Workshop on High-Performance Image Reconstruction. He has authored and co-authored more than 120 journal and conference papers, and he has participated in 15 tutorials at international conferences on various topics in visualization and medical imaging. He is a senior member of the IEEE and the IEEE Computer Society. For more information, see http://www.cs.sunysb.edu/~mueller

ITS 102 First-Year Seminars

ITS 102.7: Societal Impact of Nanotechnology
Meeting Pattern: TU 9:50AM-10:45AM
Location: Center for Information and Technology Studies A04 (Gray College)

This course will focus on the applications and societal implications of nanotechnology. After a brief introduction to research in nanotechnology (applied science and technology at the molecular level), attention will turn to the myriad of potential applications of nanotechnology. Special consideration will be given to scientific, social, political, economic, behavioral, legal and ethical aspects of the development and applications of nanotechnology.

David Ferguson, *Technology and Society*
David Ferguson is a Distinguished Service Professor of Technology and Society and Applied Mathematics and Statistics at Stony Brook Univeristy. Currently, he is chair of the Department of Technology and Society. His research and teaching are intertwined and focus on issues of quantitative reasoning; problem solving; use and assessment of educational technologies; technology in mathematics, science and engineering education; and decision making.
Dr. Ferguson has held many funded research and special projects. He co-directed the NSF-supported Algorithm Discovery Development project and two NSF-funded Faculty Enhancement workshops on the teaching of introductory computer science courses. Under support from the Sloan Foundation, he developed a course in Applications of Mathematics for liberal arts students. He also co-designed and co-taught a multidisciplinary course, jointly offered by Biological Sciences and the College of Engineering and Applied Sciences, on Computer Modeling of Biological Systems. He was a co-PI on a multi-campus project, funded by NSF, on Mathematical Sciences and Their Applications Throughout the Curriculum. Currently, he is co-PI on two NSF-funded educational technology projects: 1) MathThread project to study the learning and teaching of mathematics via distance learning, and 2) Project on Innovative Approaches to Computer-Human Interfaces. In addition, he has developed a variety of curricular materials to help undergraduates improve their quantitative reasoning.
At the graduate level, Professor Ferguson teaches courses in educational technology and decision making. He supervises projects in such areas as advanced technologies in the learning and teaching of mathematics, science and engineering; problem solving in a variety of content areas; computer-human interfaces; quantitative models in decision making; and teacher and faculty development.   In 1992, Professor Ferguson received the State University of New York Chancellor's Award for Excellence in Teaching. He is a New York State and national leader in programs to enhance the participation of underrepresented minority students in undergraduate and graduate science, mathematics, engineering, and technology programs. Dr. Ferguson was a member of the executive committee of the NSF- supported Recognition Award for the Integration of Research and Education (RAIRE). From 1998 until 2002, Dr. Ferguson directed Stony Brook's Center for Excellence in Learning and Teaching (CELT). He enjoys the very diverse learning environment where educators, engineers, enviromental professionals, and current, as well as emerging managers, learn collaboratively.

ITS 102.8: Engineering and Technology Ethics
Meeting Pattern: TU 12:50PM-1:45PM
Location: Library S1410D

In order to function in a society driven by technology and innovation, understanding the basics of the legal system on which it is based is as important for the lay person, as for the scientist or engineer. In this course we introduce the concept of critical and independent thinking about moral issues and how to apply this moral thinking to situations that arise in the course of professional business practices. We will define the laws pertaining to it, the business drivers behind it, and the ethical responsibilities associated with it. Ethical conduct in the workplace is discussed. Subjective terms and relations to societal norms are discussed and legal definitions and terminology is introduced. Analysis of complex problems and resolving these problems in the most ethical manner. Ethical cases involve issues of public safety, bribery, fraud, environmental protection, fairness, honesty in research and testing, and conflicts of interest.

Donna Tumminello, *Technology Licensing and Industrial Relations*
Donna Tumminello is an Assistant Director in the office of Technology Licensing and Industrial Relations at Stony Brook University

Responsible for coordinating intellectual property management and technology transfer activities for the College of Engineering and Applied Sciences. Expertise in analyzing inventions, promoting partnerships with corporations and business, and developing and executing strategic licensing contracts

ITS 102 First-Year Seminars

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ITS 102.9: Computer Security: Attacks and Defenses
Meeting Pattern: M 10:40AM-11:35AM
Location: Irving College 180

Computer security is an increasingly important and difficult issue in our society. Why is it so hard to produce a secure computer system? This course will explore some of the challenges, by examining selected attacks and defenses. In the process, we will learn about the inner workings of some core aspects of computer security.

Scott Stoller, *Computer Science*
Professor Stoller's primary research interests are analysis, optimization, testing, and verification of software, with emphases on concurrency and security.

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ITS 102.10: Social, Legal, and Ethical Issues for Information Technology
Meeting Pattern: TU 9:50AM-10:45AM
Location: Computer Science Building 1310

This course deals with the impact of computers on us as individuals and on our society. Rapid changes in computing technology and in our use of that technology has changed the way we work, play and interact with other people. These changes have created a flood of new social and legal issues that demand critical examination. For example, technologies such as Gmail, FaceBook, MySpace, along with music sharing sites and Wikis create new social, ethical, and legal issues.

Here are a few examples of the issues we will be talking about:
    * There is a great deal of information about all of us recorded in computer databases. What rules should govern how this information is used? (We all get privacy notices in fine print from our banks, credit card companies, etc. -- what do they really mean?) Hacking, identity theft and credit card fraud has increased in recent years. What are responses to these types of fraud and what precautions can we take to prevent this from happening?
    * New encryption methods make it possible to keep e-mail and phone conversations secret from others. How should our desire for privacy be balanced with the need of law-enforcement agencies to intercept communications of suspected criminals or terrorists?
    * How serious are the problems created by Web sites that contain pornography, 'hate' material directed at various groups, bomb-making information, etc? Should there be any restrictions on material that is put on the Web?
    * It is easy to use computers to copy music, software, books, etc., in violation of copyright law. What is the extent of this problem? What can or should be done about it? What is free software? Should all software be free?
There are (at least) two sides to almost all of the questions we will consider in this course. We will spend much of our class time discussing the issues and exploring different points of view.

Robert Kelly, *Computer Science*
Rob Kelly's research interests include medical informatics, software engineering, systems engineering, image processing, Internet programming, and parallel programming. The primary research focus has been on systems to reduce the incidents of medical errors in acute health care facilities. This work includes a system for a high-level interface to medical monitors, an Anesthesiology clinical support system, a rule-based system for discharge planning, and a system to associate monitor data with outcome data to improve prediction of changes to a patient's condition in critical care settings. He is also developing systems to process marine science sensor data with the goal of developing inquiry systems for marine features. Rob has published papers on these topics in major journals and conferences. He has been on program committees or chaired invited sessions of a number of international conferences. Rob is also the director of the undergraduate program in Information Systems. He has received two Computer Science Department teaching awards, most recently in 2010. Collaborating with an industry partner, he has developed a software application that received the Long Island Software Award for Internet-based software. He is also the recipient of the State University of New York Promising Inventor Award. Prior to joining Stony Brook University in 1999, he was Vice President of Global Professional Services at Computer Associates, and prior to that he was Director of Research & Development at Northrop Grumman Data Systems. He also serves as Vice Chair of the Board of Directors for the Bethpage Federal Credit Union, a $3.9B financial institution.

ITS 102 First-Year Seminars

ITS 102.11: Technology Intellectual Property: How to Protect your Technology Ideas and Avoid Stealing Others?

Meeting Pattern: M 6:50PM-7:45PM
Location: Center for Information and Technology Studies A04 (Gray College)

Intellectual Property Law is the body of law devoted to protecting intangible assets. Defining laws to protect your house or your car is easy. How do you protect your new design? Your company name? Your software code? We will discuss the various types of intellectual property law and how they can be used to protect your valuable research and development. The prime focus will be on patent law as it protects "inventions". The course will survey the major cases and issues in patent law including protecting your intellectual property and learning how to avoid infringing the intellectual property of others. Half of the semester will be in a lecture format where cases will be presented by the instructor and the other half will be presentations by students.

Steve Rubin, *Dilworth & Barrese, LLP* Steven Rubin has over 10 years experience in counseling clients on patent related matters. He advises clients throughout all phases of a patent's life from conception by an inventor to enforcement. He drafts and prosecutes patent applications and has managed large patent portfolios, identified potential patent infringement assertions and potential cross-licensing opportunities and provides infringement opinions as needed. He represents clients in patent enforcement and litigation matters domestically and internationally. Mr. Rubin also reviews patent portfolios and pending patent litigations in relation to corporate mergers, acquisitions and investments.

Mr. Rubin is the Chairman of the IEEE (Institute of Electrical and Electronics Engineers) Long Island Section Power & Energy and Industrial Applications Joint Societies Chapter, and the Legal Affairs Section Officer for the Long Island Chapter. He has also taught patent law to students and faculty at Brooklyn Law School, Fordham Law School, Stony Brook University, and Farmingdale State College.
Mr. Rubin is a prolific author and lecturer on patent law. Mr. Rubin is frequently called upon by the media to comment on recent events in patent law. Recently, he has been quoted by IP Law & Business, Forbes, Information Week, macnewsworld.com, ecommercetimes.com, TechNewsWorld, Linuxinsider, EE Times, IPLaw360.com and Information Display magazine.

Mr. Rubin is a member of Eta Kappa Nu (the electrical and computer engineering honor society), a senior member of IEEE and a corresponding member of IEEE-USA Intellectual Property Law Committee.

ITS 102.12: Complex Systems, Emergence of Behavior and Prediction

Meeting Pattern: TU 2:20PM-3:15PM
Location: Center for Information and Technology Studies A04 (Gray College)

Complex systems are composed of a large number of components and are characterized by an even larger number of interactions among the components. A common feature of complex systems is that they are not amenable to exact descriptions. Examples of complex systems include the climate, patterns in nature (meandering rivers, mountain ranges, ridges on the surface of sand dunes), formation of animal aggregations (fish schools, ant colonies), nervous systems, biological systems (cells with their signaling pathways), economies (interdependence among financial markets), and engineering systems (telecommunication infrastructures, power grids). Complex systems constantly evolve in time, often seemingly in an unpredictable way. In this course various important issues of complex systems are addressed including ways of understanding how structures and behavior emerge from the individual components of the systems and how the systems unfold with time.

**Petar Djuric,** *Electrical and Computer Engineering* Petar M. Djuric received his B.S., M.S., and Ph.D. degrees in electrical engineering. Since 1990 he has been with Stony Brook University, where he is Professor in the Department of Electrical and Computer Engineering. He works in the area of statistical signal analysis and processing.

ITS 102 First-Year Seminars

ITS 102.13: Biomedical Engineers: What Do they DO, Anyway?
Meeting Pattern: TU 9:50AM-10:45AM
Location: Bioengineering Building 202

Biomedical engineering is a field that is exploding of recent. This seminar explores the training required for biomedical engineers, various roles of biomedical engineers in industry, medicine and law, and the job prospects for those with a BME degree.
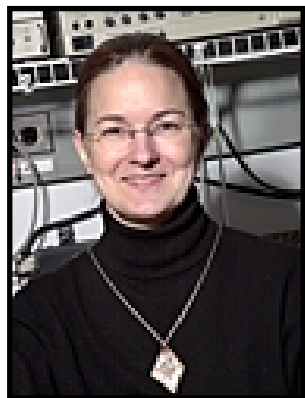
Mary Frame McMahon, *Biomedical Engineering* Dr. Frame is the Director of the Undergraduate Program in BME at Stony Brook. She has been faculty at SBU since 2002. Her research area of expertise is microfluidics both in vivo and in fabricated microchannels.

ITS 102.14: Conflict Resolution: Concepts, Principles & Practices
Meeting Pattern: W 10:40AM-12:40PM
Location: Center for Information and Technology Studies A04 (Gray College)
Note: This class will only meet on February 2, 9, 16, 23, March 2, 16, and April 27

The confluence of energy, environment and society is a conflict flash point. The use of fossil fuels, climate change and reducing green house gases is a particularly topical issue

The course will give an overview of the traditional and contemporary concepts, principles and practices of conflict resolution. It will examine the root causes, sources and triggers of conflicts

The class will be presented with the role of diplomacy, language, techniques, methodologies and processes to identify areas of mutual interest and options for mutual gain, and determine alternatives to a negotiated resolution. United Nations case studies will be used to high light the processes. The class will also discuss and work in groups on specific energy and environment issues to practice ways of framing and resolving differing degrees of conflict.

Nay Htun, *Technology and Society*
Nay Htun is currently Research Professor, Department of Technology and Society.. He is a member of the Interim Steering Committee of the United Nations Environment Programme's Global Universities Partnership on Environment and Sustainability. He is a Fellow and Visiting Professor at the Centre for Environmental Policy, Imperial College London; Visiting Professor and Senior Advisor for Asia Pacific, International Institute for Industrial Environmental Economics, Lund University, Sweden; Honorary Professor, Tongji University, Shanghai, China; Visiting Professor and Advisor, Chulabhorn Research Institute, Bangkok, Thailand. He was Visiting Scholar at Harvard; Visiting Scholar Fletcher School of International Law and Diplomacy, Tufts University; and Chancellor Distinguished Fellow, University of California Irvine. He was formerly with UNEP and UNDP where he had the rank of UN Assistant Secretary General at both organizations. . He was seconded to the UNCED Secretariat, Geneva, Switzerland where he was the Program Director and help organized the 1992 Rio Earth Summit. He was also the focal point for business and industry; help established and liaised with the World Business Council for Sustainable Development. Prior to joining the UN, he was Department Manager with Exxon Thailand. Nay Htun is a Member of the Board of a number of not-for-profit research organizations, including the International Research Institute for Climate and Society, Columbia University, New York; and the Institute for Global Environmental Strategies, Hayama. Japan. Previously he was a Board Member of the High-Level China Council for International Cooperation on Environment and Development, The Stockholm Environment Institute; Advisory Commission on the Environment of the International Council of Scientific Unions, Paris, France, Founder and Emeritus Trustee, International Vaccine Institute, Seoul. Republic of Korea. He graduated with a Ph.D. in Chemical Engineering from Imperial College London.

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ITS 102.15: Opportunities in Science and Engineering
Meeting Pattern: M 11:45AM-12:40PM
Location: Center for Information and Technology Studies A04 (Gray College)

A survey of the various science and engineering disciplines. Guest speakers describe their respective fields of research and study and the opportunities for students entering the field today. Other topics include ethics, intellectual property and entrepreneurship. The interdisciplinary nature of science and technology is emphasized.

Monica Fernandez-Bugallo, *Electrical and Computer Engineering* Monica Bugallo is an Assistant Professor at the Department of Electrical and Computer Engineering. Her research interests lie in the area of statistical signal processing and its applications to different disciplines including communications and biology.

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ITS 102.16: Current Issues in Science and Engineering
Meeting Pattern: TH 12:50PM-1:45PM
Location: Irving College 180

A look at issues in science and engineering that have societal impact. Class discussion is emphasized. Topics relating to the environment, public safety, resources and future technologies among those to be covered.

Tom Robertazzi, *Electrical and Computer Engineering* Thomas Robertazzi was faculty director of the Living Learning Center in Science and Engineering at Stony Brook for 13 years. He is a professor in electrical and computer engineering and a fellow of the IEEE.

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ITS 102.17: Artificial Life: Fact and Fiction
Meeting Pattern: TU 3:50PM-4:45PM
Location: Center for Information and Technology
Studies A04 (Gray College)

Emerging technologies in genetics, robotics, artificial
intelligence and nanotechnology (the GRAIN
technologies), as well as bioengineering and bio-
inspired engineering, are often looked to as a pathway
to the development of "artificial life". Whether this is a
realistic outlook or pure imagination (or somewhere in
between), science fiction writers have been at the
forefront of speculation on both the promises and risks
of such a technology. From "Frankenstein" to modern
tales of cloning and autonomous robots, we will look at
how popular media has considered both the beenfits
and potential hazards of artificial life,and discuss how
this compares to current technology and what this can
teach us about ethics in science and engineering.

Gary Halada, *Materials
Science and Engineering*
Gary Halada is an associate
professor in the Department of
Materials Science and
Engineering. He is the
Undergraduate program
Director for the Engineering
Science (ESG) degree
program, as well as
coordinator of the Minors in
Nanotechnology Studies (NTS)
and Environmental
Engineering (ENE). A graduate of Stony Brook
University, Dr. Halada is a past faculty director for the
Undergraduate College of Information and Technology
Studies (ITS). His research focuses on designing bio-
inspired materials for environmental remediation and
nanoscale engineering.

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ITS 102.18: Garbage in Your World
Meeting Pattern: W 2:20PM-3:15PM
Location: Center for Information and Technology
Studies A04 (Gray College)

We will look at the kind of garbage we make, in
particular here on campus. Many people draw
conclusions about the very nature of our society from
our garbage, and we will look at some of those points
of view. The class will explore some ways we currently
manage our wastes, and examine some alternatives
that may lead to entirely different approaches to
materials use. The potential for such changes to lead
to a more "sustainable" way of life will be discussed.

David Tonjes, *Technology and Society*
Dr. Tonjes conducts research on environmental
management. His primary areas of research are solid
waste processes and management, and estuarine and
coastal management. Solid waste research topics have
included waste generation and management
methodologies, including assessments of local
programs and helping local governments plan and
implement effective strategies. Landfill impacts on the
environment are another topic of interest, including
assessments of leachate quality and treatment
methodologies, and tracing impacts to groundwater
and surface water systems following releases of
leachate to the environment, including creating and
maintaining groundwater models of the affected
systems.

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ITS 102.19: From Microelectronics to Nanoelectronics
Meeting Pattern: W 9:35AM-10:30AM
Location: Library N3090

Since the early days of microelectronics, there was a drive to build more complex and faster circuits and systems in a chip. According to the well known Moore's Law, circuit complexity (roughly the number of transistors) and computer performance doubles every 24 months. This has been achieved mainly by scaling down the dimensions of the building blocks (MOS transistors) from several microns to less than 0.1 m or 100 nm (nanometer) at present. At this scale, new physical effects start to manifest themselves and change the behavior of conventional devices. In addition, completely novel nanoscale devices are being proposed that could hasten the transition from microelectronics to nanoelectronics. This course will give a general overview of microelectronics and introduce some of the novel nanoscale devices being pursued.

Ridha Kamoua, *Electrical and Computer Engineering*
Undergraduate Program Director, Associate Professor Department of Electrical & Computer Engineering

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ITS 102.20: Having Fun with Polymers
Meeting Pattern: TU 5:20PM-6:15PM
Location: Engineering Building 210

Learning what polymers can do, using hands on demonstrations. You will make goo, nylon, foam sculptures, quicksand,ice cream, etc, to understand how very large molecules have a science of their own.

Miriam Rafailovich,
Materials Science and Engineering
Miriam Rafailovich is the co-director of the program in chemical and molecular engineering and directs a research program for polymers nanocomposites with applications in tissue engineering, energy, and flame retardant materials.

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ITS 102.21: Society on the Web
Meeting Pattern: M 12:50PM-1:45PM
Location: Computer Science Building 2114

The Internet has become the fastest-growing technology in world history. The Web is a major part of our lives. We use it for communication, school, work, entertainment, shopping, and a lot more. In this course, many aspects of our new life on the web will be explored. Also, students will have the opportunity to share their knowledge and online experiences about topics such as E-Learning, social relationships, E-commerce, culture on- line, government and political life.

Ahmad Esmaili, *Computer Science*
Lecturer
Computer Science Department
Research Topics: Algorithms, information systems

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ITS 102.22: Games for Learning
Meeting Pattern: TH 9:50AM-10:45AM
Location: Computer Science Building 2205

Today's games are not just child's play. With their immersive environments, engaging activities, and social networks, games have the potential to influence large audiences in the 21st century the way that motion pictures did in the 20th century. Serious games are designed to inform, educate, persuade, train, test hypotheses, and build communities. This seminar will explore emerging technologies and trends in serious games, and give students the opportunity to design their own serious games.

Lori Scarlatos, *Technology & Society*
Dr. Lori Scarlatos is an associate professor of Educational Computing in the Department of Technology and Society, and is affiliated with the Department of Computer Science and the Future of Learning Lab at the Center for Excellence in Wireless and Information Technologies (CEWIT).
Holding a BFA in fine arts and an MS in computer science, she worked for 10 years in industry before earning her PhD in computer science. Her game development experience includes 1) leading the game development efforts at Lecht Sciences, Inc., in New York City; 2) exploratory work on educational games funded by NSF POWRE and CAREER grants, producing projects that were installed at the Goudreau Museum of Mathematics and the San Antonio Children's Museum; and 3) combined research and curriculum development, also funded by NSF, which led to the development of several educational games and software-supported learning activities that were distributed to school districts through Eastern Suffolk BOCES, and are still being used by the Cleary School for the Deaf and in schools across Long Island. Her PhD dissertation on data representations for rapid visualization and analysis led to a USA-TEC/ARPA contract to apply her techniques to battle simulators.

Dr. Scarlatos is also dedicated to the cause of broadening participation in computing (BPC), having supervised teams of undergraduate women on CREW (Collaborative Research Experiences for Women) projects, and run Brooklyn College's BPC demonstration program. Currently, she is PI for the SBU portion of the NSF-funded BPC Emerging Leadership Alliance, and instructor for the local TechPrep program which reaches out to economically disadvantaged middle-school girls.