The IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NJ Consultants' Network:

"What's It Worth?" – Putting A Price On Consulting Services

On Thursday, January, 31, 2002, the IEEE Consultants' Network of Northern NJ (CNNNJ) will conduct a panel discussion and presentation with member experts of the Northern NJ Consultants' Network on "What's It Worth?" – Putting A Price On Consulting Services."

About the Meeting

Appearing regularly like a reoccurring nightmare, the most prevalent dilemma among independent technology consultants, both novices and veteran consultants alike, is deciding how much to charge their next client for their services. Putting a price tag on yourself can be a daunting and uncertain process. A panel of consultants from the Northern NJ Consultants' Network will discuss the various methods that they have used in their practices. Among the topics to be covered:

❑ Flat fee pricing vs. Time & Materials pricing

❑ The Contract Engineer vs. the Expert Consultant

❑ Pricing from The Client's Perspective

❑ Negotiation Factor: To Haggling or Not to Haggle

About the Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in 1992 to encourage and promote the use of independent technical consultants by business and industry.

All Welcome!

You do not have to be a member of the IEEE or of the Consultants' Network to attend. Networking after the meeting is encouraged. There is no charge for admission.

Time: 7:30 PM, Thursday, January 31, 2002.

Place: KDI Triangle, 60 S. Jefferson Road, Whippany, NJ (entrance at rear).

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org.

North Jersey Spring 2002 Student Presentation Contest

The new Spring-02 Student Presentation Contest is coming up! The North Jersey Section will be holding a presentation contest scheduled for late-February or early-March of 2002. This contest has been held in years past and its overwhelming success in generating student participation and interest make it an fantastic event for up and coming engineers. This year's contest will feature similar prizes ($$$) and have graduate and undergrad categories.

The main focus of the presentation contest is to give students an opportunity to sharpen their communication skills, and help prepare for real life situations as practicing engineers and researchers. Additionally, the North Jersey Section contest provides an excellent chance for students to practice for the Region I Student Paper contest in the spring.

The contest at the North Jersey Section level is also supplemented by awarding cash prizes to the three best presentations in both graduate and undergrad categories. All engineering students are encouraged to participate in submitting team or individual presentations on any project work related to engineering. This local contest does not require students to write a full paper, just a slide-based presentation on technical or non-technical work is sufficient. Senior design projects, lab projects, personal engineering hobbies, engineering policy etc. are great topics to submit. Moving onto the regional contest requires submitting a short written paper.

The details of contest rules, judging criteria, viable topics for presentations, and abstract form will be same as last year. Also if you would like to get an idea of what topics would be appropriate or how you can prepare your abstract, take a look at winners from past years at the NNJ IEEE SAC homepage in the archive section.

This year's North Jersey Section Contest will be open to graduate and undergraduate students and first/second/third place prizes will be awarded in each category of $100/$75/$50. The exact date and time will be announced at they become available. All participants MUST submit an abstract by filling in the form available at the SAC website to qualify as a contest participant.

Any and all questions can be emailed to the contest organizer, a.j.patel@ieee.org and check out the website:

http://ewh.ieee.org/r1/north_jersey/sac

JANUARY 2002

NEWSLETTER STAFF

Editor...Keith Saracinello
Business Manager ....Theresa Saracinello

Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be sent to the Business Manager via e-mail at *k.saracinello@ieee.org* or to *The IEEE Newsletter, c/o Keith Saracinello, 25 Messenger Ln, Ringoes, NJ 08551*, (908) 791-4067.

IEEE NJ SECTION HOME PAGE
http://www-ec.njit.edu/~ieeenj/
IEEE NJ SECTION NEWSLETTER HOME PAGE
http://www-ec.njit.edu/~ieeenj/
NEWSLETTER.html

REPORT ADDRESS CHANGES TO:
IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

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  Bhanu Chivakula (b.chivakula@computer.org)
  Naz Simonelli (naz@sprynet.com)
  Dr. Richard Snyder (r.snyder@ieee.org)

The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Wayne Owens at (201) 767-3400, ext. 226, wowens@crestron.com.

NJ EMS and Communications Society Chapters:

Wireless Network Deployment - A Project Management Perspective

On January 17, 2002, the IEEE North Jersey Section Engineering Management Society and Communications Society Chapters along with NJIT will host a presentation on "Wireless Network Deployment - A Project Management Perspective." The speaker will be Ravi S. Bhatia, PMP.

About the Talk

Metricom, a wireless pioneer founded in 1985, shutdown operations in August 2001 after deploying an ambitious, nationwide high-speed mobile wireless Internet access network. In 1999, armed with a proprietary micro-cellular digital network (MCDN), and $600 million in funding from Worldcom and Vulcan Ventures, Metricom sought to stay ahead of the looming threat of 3G by building a massive network at a frenetic pace, and effectively created a new market for mobile data. This was a mega-project that demanded the integration of numerous disciplines including RF engineering, site acquisition, project management, logistics coordination, zoning, construction management, network optimization and a group of people who were willing to take risks.

The lessons learned from the *Ricochet 2* project will be of interest to those who seek to understand the pitfalls and characteristics attendant to the deployment of a wireless network. The focus is on three key elements: design and development of a new technology, operation of a national project management matrix team, and management of a complex mix of vendor relationships, legal challenges and physical constraints. In the final analysis, Metricom may have failed due to an inability to commercialize its service fast enough to pay its creditors, but operationally, its network was acclaimed by many loyal users who regarded its service as unique and without credible substitutes.

♦ DALLAS, Feb. 15 /PRNewswire/ -- The following report is being issued by Billy C. Bowden of Ameri-First Securities.
No one has launched a network of this magnitude, this quickly, for less dollars, ever. More bang for less buck! Despite the disappointing modem sales, this network is coming together, and more importantly, the network is not buggy. To replicate a network with these numbers of pops, in a competing technology, would carry an aggregate cost north of 100 billion dollars

About the Speaker

Most recently, Ravi Bhatia managed the NYC segment of Metricom's *Ricochet 2* deployment - the U.S.' first wireless mobile high-speed Internet access network, employing RF technology using a system comprised of wired access points which house antennas (WAP sites) and micro cell repeater radios transmitting IP packets at license-free frequencies (900Mhz and 2.4Ghz). The deployment entailed securing rights-of-way, and leasing, zoning, RF engineering, WAP construction, optimization and maintenance.

Ravi has 17 years of project management experience on high-visibility projects for fortune 500 clients and large institutions. This has included team building, client management, estimating, contracts management, purchasing, planning, engineering, project accounting, and cost control. Other prominent projects include the retrofit, and upgrade of AT&T's corporate headquarters at 32 Avenue of the Americas, U.S. Federal Courthouse at Foley Square and Sheraton New York Hotel restoration.

His career has spanned technical sales, business development, subcontracting, construction management and program management. He has a BS in Engineering (Polytechnic University), a MBA (Hofstra University) and a MS in Telecommunications and Information Management (Polytechnic University). He is a member of IEEE, Project Management Institute and The New York New Media Association.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends.

Time: 6:00 PM (refreshments start at 5:45 PM), Thursday, January 17, 2002.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.

Information: Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu) or Wayne Owens (201) 767-3400 x226 (wowens@ieee.org). Please check http://www-ec.njit.edu/~ieeenj for the latest updates.

Volunteers Needed-PES Winter 2002 Meeting

The IEEE Power Engineering Society will conduct the 2002 Winter Meeting Technical Conference at the New York Hilton Hotel, NYC in the Rockefeller Center area (6th Ave at 53rd) January 27-31, 2002. Volunteers are needed to assist in various administrative duties, especially on Sunday, Monday and Tuesday. Please contact Ken Oexle at 973-386-1156 for additional details and information.

Call for Speakers- 27th Annual Trenton Computer Festival

The deadline for submitting applications is February 1, 2002. See

http://www.tcf-nj.org/spkr_reg.shtml

for details.

IEEE North Jersey Section Activities
January 2002

Jan. 15–WOCC 2002 Presentation Submission Deadline. Details can be found on http://www.wocc.org.

Jan. 17–"Wireless Network Deployment - A Project Management Perspective" - NJ EMS and Communications Society Chapters, 6:00 PM (refreshments at 5:45 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu), Wayne Owens (201) 767-3400 x226 (wowens@ieee.org). Please check http://www-ec.njit.edu/~ieeenj for the latest updates.

Jan. 27-31–"Power Engineering Society 2002 Winter Meeting" - New York Hilton (6th Avenue at 53rd Street), NY, NY. For more information see http://www.ieee.org/organizations/society/power/subpages/meetings-folder/wm2002/wm2002page.html.

Jan. 31–""What's It Worth?" – Putting A Price On Consulting Services" – NJ Consultants' Network, 7:30 PM, KDI Triangle, 60 S. Jefferson Road, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Upcoming Meetings

Feb. 1–Application Deadline for 27th Annual Trenton Computer Festival Call for Speakers. See http://www.tcf-nj.org/spkr_reg.shtml for details.

Feb. 6–"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Wayne Owens at (201) 767-3400 ext. 226 or wowens@crestron.com.

Feb. 13–Apr. 24 – "Introduction to JAVA Programming" – North Jersey Section, Wednesday Evenings, 10 sessions, 6:30-9:00 PM, BAE Systems (formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. Bhanu Chivakula at b.chivakula@computer.org.

Mar. 5–Apr. 9 – "Object-Oriented Programming" – North Jersey Section, Tuesday and Thursday Evenings, 10 sessions, 6:30-9:00 PM, BAE Systems (formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. Bhanu Chivakula at b.chivakula@computer.org.

Apr. 26 & 27-"The 11th Annual Wireless and Optical Communications Conference", 8:00 AM Registration, 9:00 AM Opening Remarks, Marriott Hotel, Newark Airport, Newark, NJ. Details can be found on http://www.wocc.org.

Members and Non-Members Welcome
PLEASE POST

PSDW Fall 2001 Concluded

On Saturday, November 17, 2001, at Stevens Institute of Technology, in Hoboken, NJ, the North Jersey Section Student Activities/GOLD, and Jersey Coast GOLD committees jointly sponsored the Professional Skills Development Workshop. The event was a success with several excellent speakers giving informative, enthusiastic, and engaging seminars. Attendance peaked at some 40 guests. The audience members featured a mix of students and GOLD guests from different universities and from around the NY-NJ metro area.

Details of the talks given and event can be found at the NNJ SAC website of http://ewh.ieee.org/r1/north_jersey/sac

Also, pictures below show some of the speakers and organizers involved with the event.

Pictured left to right are the PSDW F01 Organizer and SAC Chair Amit Patel, GOLD Chair Sameer Kalra, Speaker Bala Prasanna, and Speaker Kandaswamy Subramaniam.

Pictured left to right are Excom and Education Committee Member Fred Chichester with speaker Kandaswamy Subramaniam.

IEEE Trip to Brookhaven has Students 'Exposed' to Radiation

By Eric Balance

Upton N.Y. - County College of Morris (CCM) students and faculty are exposed to miniscule levels of radiation during a collision of heavy ions taken from gold.

Ion colliding is one of many on-going research projects at Brookhaven National Laboratory in Upton, N.Y., where CCM students and faculty from the Business, Mathematics, and Engineering Technology Division visited on Tuesday, November 20.

Brookhaven National Laboratory conducts controlled experiments, under the ground, in a facility known as the Realistic Heavy Ion Collider - a particle accelerator.

The trip, hosted by the IEEE, gave students and faculty an opportunity to experience research performed in the industry first hand. "It was very informative," said Andrew Millner, a mechanical engineering student at CCM.

The RHIC is a 2.5-mile (circumference) two-lane "racetrack" that accelerates molecules of gold, stripped of their electrons, several times around until the stripped molecules, or ions, reach near light speeds. Once the ions reach a pre-determined velocity, they are collided together at specific junctions on the racetrack.

During the collision several cameras take nearly 800 pictures combined, some simultaneously, some at particular intervals, in order to provide a 360-degree, 3D image of the collision.

After the collision is recorded and photographed, a consortium of research scientists from countries all over the world evaluate the data on several criteria; one of which is how direct or indirect the collision of the two ions occurred.

Research, is done by "viewing" the explosion and tracking and trending the particles that fly off the collision. It is by this process that quarks and gluon was discovered, which are now believed to be the smallest particles. Compared to the atom, a quark is a grain of sand and an atom is the planet earth.

The racetrack is made from hundreds of mammoth sized magnets that are strung together like beads on a necklace. The bead of magnets is hollow in the center and contains a small pipe, only inches in diameter. The pipe carries tungsten wires coated with gold, which is the medium for conducting the heavy ions.

There are massive detectors residing at specific points on the magnet track. These detectors are able to take different types of measurements during an explosion.

The CCM group was able to visit one other interesting area of the compound and still enjoy lunch in the cafeteria building, despite getting stuck in traffic on the way to NYC for 3 hours. "I would do it again. It was worth the trip," said Millner.

From left to right: Professors Joseph Vallely and Dominick D'Stefan (IEEE Advisors), and Eric Ballance (IEEE CCM Student Chapter President), Andrew Burns (IEEE VP), Pete Cavaluzzo (IEEE member), Kevin Caballero (IEEE member), Andrew Millner (IEEE member), Jennifer Eng-Harris (IEEE Treasurer/Secretary), Concetta Cantelmo (CCM Lab Coordinator), Rodrigo Olguin (IEEE Programming Officer), Professor Nial McCabe taking picture

2001 Outstanding Engineer Award, IEEE PES - North Jersey Section

The Executive Committee of the Power Engineering Society Chapter of the North Jersey Section IEEE recognizes Ken Oexle for his outstanding contributions to the engineering profession, as well as his dedicated service to the IEEE North Jersey Section and the Power Engineering Society Chapter.

Mr. Oexle has made several pioneering technical contributions in the areas of transmission & distribution engineering during his career at Jersey Central Power & Light Company/GPU Energy, Morristown, New Jersey. He retired in 1997 as Director of T&D Engineering & Operations. He has consulted in the areas of technology transfer, energy deregulation and technical conference management and assisted members of the NJ State Legislature in drafting and critiquing the Energy Deregulation Bill adopted in New Jersey in 1999.

Mr. Oexle graduated from Newark College of Engineering BSME (1964), and MS (1966). He is a Licensed Professional Engineer and Professional Planner in New Jersey, and has completed management courses at New Jersey Institute of Technology, the Public Utility Executive Program at the University of Idaho Graduate School of Business, and the Executive Program at the Penn State Graduate School of Business.

Mr. Oexle joined JCP&L (GPU Energy) in 1964 in the System Planning department. He advanced through several engineering assignments serving as Manager of System Planning, Director of Distribution Engineering & Operations and Director of T&D Engineering & Operations.
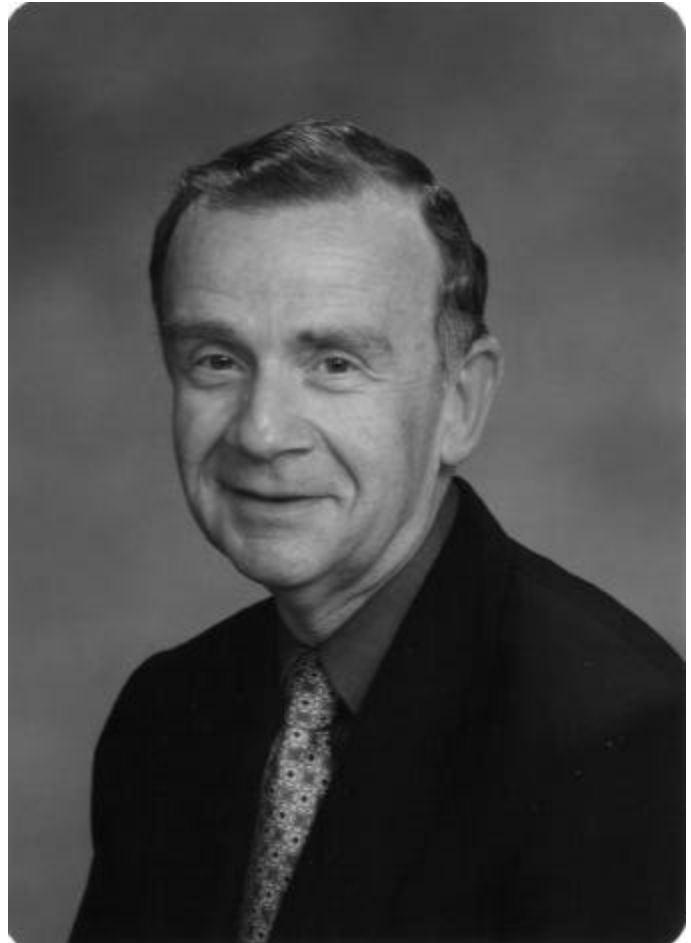
At JCP&L he demonstrated the feasibility of several new innovative technologies to dimension, identify, replace and restore deteriorated direct buried underground residential distribution (URD) cables and accessories. Mr. Oexle has also provided leadership in several other technical areas. He developed strategies to supply customer load at 19.9 kV primary voltage distribution and was presented an IEEE Region 1 Management Award for successfully implementing this new technology. He also piloted and implemented one of the first successful Automated Mapping and Facilities Management (AM/FM) system for a utility application. The computer based information technology system links physical electrical plant and customer electrical addresses to specific protection devices (breaker/fuse/etc.). Mr. Oexle was also instrumental in the investigation and installation of automated meter-reading technologies to support customer billing and load management activities. In the area of engineering education, he initiated the first graduate school level Regional Power Systems Engineering Course (PSEC) hosted at local utility sites and presented by the General Electric Company. Between 1991-95 period over 80 engineers from 7 utilities participated in the PSEC Regional course. He also led an engineering staff in the commissioning of an independent fuel cell supplying critical power requirements at a research facility requiring a high level of service reliability and source of quality power.

Ken's IEEE volunteer activities include: Past Chairman North Jersey Section; Past Chairman Power Engineering Society Chapter of North Jersey; Chairman of Industry Applications Society Chapter of North Jersey; Chairman of the North Jersey Section IEEE Awards Committee; IEEE North Jersey Section Representative to the Student Exposition on Energy and Environmental Resources (SEER); Member of the IEEE Winter Power Engineering Registration Committee; and Member of the IEEE Admissions and Advancement Committee

Mr. Oexle is an active member in his local community. He serves as: a member of the United Way of Morris County Executive Planning and Allocations Committee; a speaker at Engineering Career Day Programs sponsored by the New Jersey Society of Professional Engineers; Past President of his church's Parish Council, and a member of the Advisory Committee for Power Engineering Education in the Department of Electrical and Computer Engineering at New Jersey Institute of Technology.

Mr. Oexle was presented The IEEE Centennial and Third Millennium Medals; the IEEE Region 1 Engineering Management Award; and the North Jersey Section Service Recognition Award.

Mr. Kenneth John Oexle, P.E.,
Senior Member, IEEE

WOCC2002 Call For Presentations

The Eleventh Wireless and Optical Communications Conference

26-27 April, 2002, Newark Airport Marriott Hotel, Newark, New Jersey, USA

Conference Chair
Charles Kao, former Vice Chancellor, Chinese University of Hong Kong

Conference Organizers
James Hwang, Lehigh Univ.
Chung-Sheng Li, IBM

Technical Program Chairs
T.C. Chiang, Lucent
Cedric F. Lam, AT&T
Shih-Ping Liou, Siemens

Conference Coordinator
Hsuan-Jung Su, Lucent
Heather Yu, Panasonic

Advisors
Gee-Kung Chang, Telcordia
Terry Cheng, Lucent
Russell Hsing, Telcordia
Chih-Lin I, AT&T
Hai-feng Li, Tycom
Sing Lin
Michael Wang, AT&T
On-Ching Yue (Chair), Lucent
Kang Yueh

Sponsors
♦ The Chinese Institute of Engineers - USA (CIE-USA)
♦ The Photonics Society of Chinese Americans (PSC)
♦ The Chinese Association of Science and Technology (CAST)
♦ The Chinese American Academic and Professional Society (CAAPS)
♦ The Monte Jade Science and Technology Association (MJSTA)
♦ IEEE North Jersey Section

For the last 10 years, WOCC has enjoyed great success in providing a unique opportunity for telecommunication professionals to exchange ideas and to extend their business networks. It offers a forum to discuss both business and technical topics in the telecom industry, especially business opportunities between the USA and Asia/Pacific. The theme of WOCC2002 is **"Riding the Next Wave: Technologies Leading to and Substantiating Telecommunication Industry Recovery."** Until about two years ago, the telecommunication industry had been enjoying tremendous growth. The demand for bandwidth seemed insatiable and opportunities seemed endless. Then came the economic downturn and the burst of the Internet bubble, which had setback the industry including many wireless, optical and multimedia companies.

Nonetheless, the current situation in the telecom industry presents us with both challenges and opportunities. We believe the industry will recover and businesses that survive this turmoil will eventually flourish. This conference examines the technologies and business drivers that will lead the recovery of the telecommunication industry. Abstracts of presentation are solicited in areas of multimedia, wireless and optical communications. Presentations can be made in one of the following (but not exclusive) forms:

- reports of new technological and scientific findings and results
- reviews, tutorials and technology surveys
- field trial and new technology deployment results
- economic studies and analysis
- business proposals and presentations

Submission Deadline: 15 January, 2002

Authors will be notified by **March 1, 2002** about the acceptance of their presentation.

Format: Include both abstract and bio of speaker on one page, 8.5"x11", 1" margin, font size>10. Also, title of talk, name affiliation, and e-mail address.
Send Microsoft Word file to:
tchiang@lucent.com
cflam@ieee.org
Shih-Ping.Liou@scr.siemens.com

Please refer to: http://www.wocc.org/ for details of page formatting and other information about WOCC2002.

IEEE North Jersey Section Course
INTRODUCTION TO JAVA PROGRAMMING

Wednesday Evenings, February 13, 2002 through April 24, 2002 (No class on March 27)
Ten weekly classes (February 13, 20, 27, March 6, 13, 20, April 3, 10, 17, 24, 2002)
BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ
(Checks should not be mailed to this address)

The North Jersey Section IEEE is offering an evening course entitled "Introduction to Java Programming." Java Programming has gained enormous popularity in corporate Information System applications as well as in advanced Webpage Design since 1996. About 2.5 million Java Programmers are currently working on all types of commercial projects in the world, ranging from cell phone applets, to UNIX server, to mainframe data-warehouse access.

Since Java is similar to C++, it is an easier transition for C++ Programmers. This course, however, will be for anyone even he/she never took a programming course. The instructor will provide the necessary software (compiler and editor) for everyone to get started immediately from ground zero!

Instructor: Donald Hsu, has been a corporate manager for 11 years and is an experienced trainer. Since 1997, he trained 150+ people in Java Programming and Advanced Java Programming courses in five organizations.

TOPICS

1. Explain the dynamic growth in Java Programming
2. Contrast the importance of AWT, CGI, JavaScript and HTML
3. Classify the different types of Java applets vs Java applications
4. Identify the control structures, arrays and classes
5. Construct character strings and graphics tools
6. Define multithreading, files and streams
7. Draw multimedia, animation and Swing images
8. Build audio files, JavaBeans and networking applications
9. Distinguish Java utilities, error handling, serialization and reflection
10. Analyze real-world projects using SDK 1.3 development tools

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after February 1, 2002 will require a late fee of $25. No reservations will be accepted after February 6, 2002.

WHERE: BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. (Checks **should not** be mailed to this address)
WHEN: 10 Sessions, Wednesdays, February 13, 20, 27, March 6, 13, 20, April 3, 10, 17, 24, 2002, 6:30-9:00 PM.
COST: With textbook or notes: IEEE (& affiliate) members $300; Non-IEEE members $400.
CONTACT: Bhanu Chivakula - email b.chivakula@computer.org

REGISTRATION: Introduction to Java Programming
Please send checks with registration form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820 and direct inquiries via email to B.Chivakula@computer.org with sender's address and postmarking the envelope "Java Programming".
(Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address)

Name: / Mr. / Mrs. / Miss / Ms. / _____   _____

˅ Non-member   ✎email address ✎

˅ IEEE Member   Member #:_____   Member of _____ technical society

Employer:_____

Employer Address:_____

_____

Home Address:_____

_____

Business (day) telephone #:_____   Home telephone #:_____

Please enclose required fee payable to: **North Jersey Section IEEE**

Registration status will be mailed after February 6, 2002. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

˅ Tuition receipt will be mailed only if this box is checked   Signature:_____

IEEE North Jersey Section Course
OBJECT-ORIENTED PROGRAMMING
Tuesdays and Thursdays (bi-weekly) on March 5,7,12,14,19,26,28,April 2,4 and 9
BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ
(Checks should not be mailed to this address)

ABSTRACT

The Object-Oriented concept is almost universally used today in new design and programming work. Instead of focusing on functionality (what the programs do) it focuses on the natural objects comprising the problem and how they, and their capabilities, are modeled in the program.

This object-oriented programming course will emphasize C++, because it is the richest language, but will also cover corresponding capabilities in Java and C#. The course will begin with the concept of objects and then extend inward to the contents of objects, and outward to groupings of objects that constitutes solutions to practical problems.

AUDIENCE

Programmers who want to learn to understand and program, primarily in C++, but also in Java or C#. Knowledge of procedural ('old-style') programming is not necessary to take the course, but, because object-oriented programming is not elementary, a familiarity with such foundation programming concepts will be very helpful.

COURSE TOPICS

- Object-Orientation: Objects and classes of objects; declaration and instantiation; how to represent objects.   Methods & attributes, constructors and destructors. Concept of interobject communication by messages. Encapsulation & abstraction. Keywords.
- Attribute representation: Data naming, typing and scoping. Declaration & instantiation. Intrinsic data types: int, float, char, bool, etc. Extended data types: strings, structures, arrays, defined data types. Constants and parameters. Casting. Namespaces.
- Method representation: Function naming and overloading. Arguments and returns. Statements and statement grouping. Declaration & instantiation. Operators. Static.
- Conditional and repetition operators; Subfunctions.
- Mechanics of program creation: Compilers, emulators, jit. Formatting, layout, debugging, testing, asserts. Documentation and comments. O-O design, UML, development tools.
- Input and Output: Streams: Standard I/O, formatted I/O with manipulators, File and device I/O.
- Interaction of Objects: Inheritance: base, abstract, virtual, derived classes. Overloading, interfaces, polymorphism. Dynamic and static objects, garbage collection;
- Interfaces and multiple inheritance. Properties. this, friend, new. Pointers, references, handles.
- Extending Object capabilities: operator overloading, inter-type conversions, object I/O. Containers and iterators. Interface classes. Libraries and templates.
- Special topics: Real life applications, embedded programs, real-time programs.
- Introduction to O-O Windows programs. Interaction, widgets, mouse, resources and properties.

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after February 19, 2002 will require a late fee of $25. No reservations will be accepted after February 26, 2002.

WHERE: BAE Systems (Formerly GEC- Marconi), 164 Totowa Road, Wayne, NJ. (Checks should not be mailed to this address)
WHEN: 10 Sessions, Tuesdays and Thursdays on March 5, 7, 12, 14, 19, 26, 28, April 2, 4 and 9; Time: 6:30-9:00 PM
COST: With textbook or notes: IEEE (& affiliate) members $300; Non-IEEE members $400.
CONTACT: Bhanu Chivakula - email b.chivakula@computer.org

REGISTRATION: Object Oriented Programming
Please send checks with registration form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820 and direct inquiries via email to B.Chivakula@computer.org. Please superscribe the letter "Object Oriented Programming" and include return address. (Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address.)

Name: / Mr. / Mrs. / Miss / Ms. / _____   _____

˅ Non-member   ✎ email address ✎

˅ IEEE Member   Member #:_____   Member of _____ technical society

Employer:_____

Employer Address:_____

_____

Home Address:_____

_____

Business (day) telephone #:_____   Home telephone #:_____

Please enclose required fee payable to: North Jersey Section IEEE

Registration status will be mailed after February 26, 2002. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

˅   Tuition receipt will be mailed only if this box is checked   Signature:_____