



The IEEE

Newsletter

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

Newly Elected IEEE Fellows

The North Jersey Section IEEE congratulates the following members who were elected to the Fellow grade:

Jiunn Carl Hsu, Lucent Technologies

"For leadership in the field of communication switching and network systems"

Ira J. Pitel, Magna-Power Electronics, Inc

"For contributions to the advancement of power conditioning and harmonic mitigation techniques in industry applications."

PES Volunteers Winter Power Meeting NYC

Volunteers are needed to assist in various administrative duties during the 1999 Power Engineering Winter Power meeting to be held in New York City at the Hilton Hotel (6th Avenue at West 53rd St) January 31 through February 4, 1999. Volunteer services are especially needed on Monday February 1 and Tuesday, February 2. Contact Ken Oexle, 973-386-1156, for additional information and details.

Resolve to Join the Ranks of the Senior Members

To get information on advancing to Senior Member grade, contact Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605-2239, (201) 461-0900 Ext 234, mornings, email: don@kulite.com.

NJ Computer Chapter:

Embedded IEEE 488 Solutions

The IEEE North Jersey Computer Chapter will hold a meeting on "Embedded IEEE 488 Solutions" given by Craig Borax, on Thursday, January 14, 1999.

About the Talk

First, Craig Borax will provide an overview of the IEEE 488 or GPIB (General Purpose Interface Bus) standard for communication between test control and instrumentation devices.

Next, he will give an overview of several Embedded GPIB devices his company has developed. He will then review the following test applications implemented using Embedded IEEE 488 (E488) controllers.

1. International Space Station (ISS) Burn-in Station: The MT488 Controls a Boeing burn-in station for the ISS DC to DC Converter unit (DDCU).
2. Densitometer: The MT488 monitors a Kodak densitometer, replacing an HP computer and two IEEE 488 to RS-232 converter boxes.
3. Remote Controlled Oscilloscope: the MT488A-RC infrared remote control interface provides a 30 foot range to control oscilloscopes for training, trade shows and product demonstrations. Recently, this product received a "Best in Test" award from the *Test and Measurement World* trade organization.
4. Bridge: MESCO uses the MT488 as a bridge between a Programmable Logic Controller (PLC) and GPIB instruments in their automated oxygen sensor tester.

Finally, a demonstration will be given of the Windows based 'C' Language development environment and the IEEE 488 driver interface on Tidal Engineering's SBC488A single board computer.

About the Speaker

Craig Borax, Engineering Manager of Tidal Engineering, has more the 10 years of experience in the application of E488 technology. Tidal Engineering products are marketed by ADI, American Distributors Inc. Tidal Engineering and ADI are co-located in Randolph, NJ. Most of Craig's prior experience combined power electronics with embedded computers. He has developed DSP controlled 60 to 400 Hz power converters and converters for the F-22 aircraft.

He graduated with a BSEE from NJIT in 1980 and with an MSEE from Cal Poly, Pomona, CA, in 1983. As Program Manager for the Space Station Programmable Power Supply at Trilectron Industries in Palmetto, FL, Craig was frustrated with the available Embedded GPIB application solutions and consequently developed better solutions using the E488 technology standards.

All are Welcome!

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

Time: 7:30 PM, Thursday, January 14, 1999.

Place: GEC-Marconi, Inc., at 150 Parish Road facility, Wayne, NJ, (973) 633-3502.

Directions: See "Directions" on page 2.

Information: Howard Leach 973-540-4485 or Venugopal Tirumalai 973-367-8281.

January 1999

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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) 806-6898.

IEEE NJ SECTION HOME PAGE

<http://megahertz.njit.edu/~ieeenj>

IEEE NJ SECTION NEWSLETTER HOME PAGE

<http://megahertz.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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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 call Secretary Milton Korn (973) 365-2757.

NJ Consultants' Network:

Engineers as Expert Witnesses

On Thursday, January 28, 1999, the IEEE Consultants' Network of Northern NJ will present "Engineers as Expert Witnesses" by Mr. Mark Brancato, a trial attorney with the firm of Leary, Bride, Tinker & Moran of Cedar Knolls, NJ.

About the Talk

Litigation issues are increasingly more complex and the technical issues involved often extend beyond the understanding of lay jurors. The usage of expert witnesses and the presentation of technical analysis in the courtroom are becoming more critical in the preparation and presentation of many cases, particularly those involving intellectual property and product liability.

Mr. Brancato will discuss the role of a technical expert from the investigation stage through trial, including:

- ☐ Credentials. Do you need a PE to be a witness?
- ☐ How law firms select the right witness.
- ☐ Typical compensation methods.
- ☐ What's expected of an expert witness.
- ☐ Liabilities involved in presenting yourself as an expert.

About the Speaker

Mark Brancato is a trial attorney experienced in utilizing expert witnesses in

pre-suit investigations, trial preparations, dispute resolutions and the presentation of trial testimony. He is a graduate of Hofstra University and Seton Hall Law School.

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. Meetings are held on the last Thursday of each month. For more information, visit our web site at www.hicom.net/~cnnnj.

All Welcome!

You do not have to be a member of the IEEE to attend. Admission is free.

Time: 7:30 PM, Thursday, January 28, 1999.

Place: GEC-Marconi Hazeltine Plant 18, 150 Parish Drive, Wayne, NJ.

Directions: Route 46 or I-80 to Route 23 North. Take the exit for Rt 202 South - "Lincoln Park-Boonton". Turn left off the exit ramp onto Mt. View Blvd. Turn right at Ramapo Bank onto Parish Dr. After crossing a railroad bridge, take the first right to Dey Rd. The plant entrance is on the right.

Information: For other directions and an up-to-date meeting status, call Robert Walker at (201) 728-0344.

IEEE SARNOFF SYMPOSIUM 1999

"Advances in Wired and Wireless Communications"

DATE: Wednesday, March 17, 1999

TIME: 8:30 AM - 5:30 PM
(Exhibits: 10:30 AM - 5:30 PM)

PLACE: The College of New Jersey (Trenton State College)
Hillwood Lakes, Trenton, NJ

SPONSORS:

IEEE Princeton Section, TCNJ Engineering Department, TCNJ IEEE Student Branch & the Sarnoff Corporation.

REGISTRATION:

Advance/Same Day: \$50/\$75 (\$5/\$10 student; \$0 life members)

(Registration includes entrance to all sessions and one copy of technical digest; additional digest: \$20)

ADVANCE REGISTRATION:

Ms. Desirée McDermott (609) 734-2430, Sarnoff Corporation, CN 5300, Princeton, NJ 08543-5300. Make checks payable to "IEEE Princeton Section/Sarnoff Symposium."

EXHIBITOR INFORMATION:

Please contact Alan Egger at alanegger@representative.com or Sandy Lehrfeld at sandy@microlambda.com.

1999 Student Presentation Contest - Call for Papers !!

We are proud to announce that the North Jersey Section will be holding a presentation night scheduled for mid-February 1999. 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.

The main focus of the presentation night 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 1 Student Paper contest in the spring.

The contest at the Section level is also supplemented by awarding cash prizes to the three best presentations. 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.

The details of contest rules, judging criteria, and viable topics for presentations can be found at the North Jersey Student Activities Website:

<http://menger.eecs.stevens-tech.edu/~apatel3/ieee.html>

The exact date and location of the contest will be settled by next month. The deadline for abstracts is January 31, 1999. Any and all questions can be emailed to the contest organizer, Amit Patel - NNJ SAC, at a.j.patel@ieee.org or call (973) 284-2708.

North Jersey Section Activities January 1999

Jan. 6-“NJ Section Executive Committee Meeting” – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Milton Korn (973) 365-2757 or miltonkorn@aol.com.

Jan. 14-“Embedded IEEE 488 Solutions” - NJ Computer Chapter, 7:30 PM, GEC-Marconi, 150 Parish Road, Wayne, NJ. Howard Leach, 973-540-4485, or Venugopal Tirumalai at 973-367-8281.

Jan. 21-“Chemistry at Interfaces in Microelectronics” – NJ EDS/C&S Chapters, 7:00 PM (Buffet 6:15 PM), NJIT, Room 202, ECE Center, Newark, NJ. Dirga Misra (973) 596-5739 (dmisra@megahertz.njit.edu) or Dr. Edip Niver (973) 596-3542 at NJIT.

Jan. 28-“Engineers as Expert Witnesses” - NJ Consultants’ Network, 7:30 PM, GEC-Marconi Hazeltine Plant 18, 150 Parish Drive, Wayne, NJ. Robert Walker (201) 728-0344.

Jan. 31-Feb. 4-“Power Engineering Society 1999 Winter Meeting” - New York Hilton (6th Avenue at 53rd Street), NY, NY. For more information see <http://www.ieee.org/power/subpages/meetings-folder/winter/99wmpreview.htm>.

Upcoming Meetings

Feb. 3-“NJ Section Executive Committee Meeting” – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Milton Korn (973) 365-2757 or miltonkorn@aol.com.

Feb. 3-“Student Day at the 1999 Winter Power Meeting” – 9:30 AM, New York Hilton (6th Avenue at 53rd Street), NY, NY. <http://www.ieee.org/power> or contact Barney Adler at radler@peco-energy.com or (215) 731-3240.

Feb. 4-“A Fuel Cell Technology Forum” – 8:15 AM, New York Hilton (6th Avenue at 53rd Street), NY, NY. Ralph Tapino (718) 904-4526.

Feb. 22-May 10-“C/C++ Windows Programming” – North Jersey Section, Monday Evenings, 10 sessions, 6:30-9:00 PM, Smiths Industries, 7-9 Vreeland Road, Florham Park, NJ. Bhanu Chivakula (973) 751-4879 (leave message) or Gabe Silberman at silberman@ieee.org.

Feb. 23-Apr. 6-“Visual Basic 6.0” – North Jersey Section, Tuesday and Thursday Evenings, 6:30-9:00 PM, GEC-Marconi, Plant 11, 164 Totowa Rd, Totowa, NJ. Bhanu Chivakula (973) 751-4879 (leave message) or Gabe Silberman at silberman@ieee.org.

Feb. ?-“1999 Student Presentation Contest - Call for Papers !!” – NJ Section, time and location TBD. Amit Patel (973) 284-2708, a.j.patel@ieee.org.

Feb. ?-“Microwave Manufacturing Techniques” – MTT/S/AP-S Chapter, time and location TBD. Dr. Edip Niver (973) 596-3542 (NJIT), Willie Schmidt (973) 492-0371, or Dr. Chandra Gupta (973) 633-4469 (GEC-Marconi).

Mar. 15 - Fellows Nomination Deadline – Contact Sandy Schumacher, IEEE-Piscataway for forms and other information at (732) 562-3843.

Mar. 17-“IEEE Sarnoff Symposium 1999 - Advances in Wired and Wireless Communications” – 8:30 AM - 5:30 PM, The College of New Jersey (Trenton State College), Hillwood Lakes, Trenton, NJ. Ms. Desiree McDermott (609) 734-2430.

Apr. 25-“NJ Section Awards Reception” – 3:00 to 5:00 PM at the Birchwood Manor, 111 North Jefferson Road, Whippany, NJ. Anne Giedlinski (973) 377-3175.

Members and Non-Members Welcome PLEASE POST

NJ EDS, C&S Chapters:

Chemistry at Interfaces in Microelectronics

The IEEE NJ Section Electron Devices, and Circuits and Systems Chapters will host a talk January 21, 1999 on "Chemistry at Interfaces in Microelectronics." The speaker will be Dr. Robert L. Opila.

About the Talk

Polymers are important dielectric materials in microelectronics. While polymers are designed to have specific bulk properties, their surface and interface properties often govern their application. We have studied the formation of interfaces between polymers and metals, and found that these interfaces chemically evolve from formation through to device operation. Understanding this chemical evolution of interfaces is one of the real challenges in surface science. In situ deposition and reaction between Cr, Ti, Al, Cu, and polyimides, triazine, and polymer low k dielectrics has been studied by photoelectron spectroscopy. Metals typically decompose the polymer surface and form covalent bonds with the residues. These metal-polymer covalent bonds are usually easily oxidized by water or oxygen that diffuses into the polymer. The surface chemistry of the polymers can be altered before metal deposition. The role of plasma surface preparation of polymer surfaces has been examined. For example, the diffusion of Cu into polymers is greatly reduced if the polymer surface is cross-linked and functionalized in a N₂ plasma. Self assembled monolayers have served as ideal model systems for the polymer surface, and have shown that the reactivity of the polymer surface helps determine the morphology of the growing metal layer. The study of buried interfaces has been one of the greatest scientific challenges. Recently, we have used extended x-ray absorption spectroscopy to non-destructively study the chemical evolution of an interface. The chemical properties can be related to adhesion, corrosion resistance, and electrical reliability of the structure. Many of these current techniques are being extended to study interfaces with high dielectric constant materials.

About the Speaker

Robert Opila is Supervisor of the Surface Preparation and Interface Reliability Group in the Research Division of Bell Labs, Lucent Technologies. His responsibilities range from consultations

on manufacturing problems with engineers in Lucent factories to investigations into fundamental physical sciences. Most recently, he has been working to understand fundamental physical phenomena that occur at interfaces between metals and polymers and how to measure it. This work leads to a basic understanding of adhesion and corrosion at interfaces between ceramics, polymers, and metals and ultimately to enhanced methods of fabrication and packaging of microelectronic devices. His areas of expertise are electron and x-ray spectroscopies as well as surface and interface chemistry. Robert received his PhD from The University of Chicago in 1982 and has been at Bell Labs ever since.

All Welcome!

You do not have to be a member of the IEEE to attend. Admission is free.

Time: 7:00 PM, Thursday, January 21, 1999. Pre-meeting buffet starts at 6:15 PM.

Place: NJIT, Room 202, ECE Building, Newark, NJ.

Information: Dirga Misra (973) 596-5739 (dmisra@megahertz.njit.edu) or Dr. Edip Niver (973) 596-3542 at NJIT.

Attention Student Members!!!

What are the career opportunities and technical challenges that the graduating engineer might expect from the electric power industry?

To find out, you are invited to attend Student Day at the 1999 Winter Meeting of the IEEE Power Engineering Society.

Free of charge to IEEE Student Members, the day begins with a continental breakfast from 8:30 to 9:30 AM. This is followed by panel discussion with four engineers sharing views of four different fields in the power industry. The morning session is followed by an industry-sponsored and hosted luncheon, capped by the useful and witty comments of Dr. Gerald Karum, AT&T Labs, on the topic "Continuing Education: Keeping Ahead of the Rats." After lunch, an interactive workshop will cultivate an understanding of the important choices that one faces as one's engineering career unfolds. The afternoon concludes with a one-hour social.

Bring Resumes!

Time: 9:30 AM, Wednesday, February 3, 1999. RSVP if you plan to attend.

Place: New York Hilton (6th Avenue at 53rd Street).

Information: <http://www.ieee.org/power> or contact Barney Adler at radler@peco-energy.com or (215) 731-3240.

Buyer's Edge Available On-Line!!!

About the Buyer's Edge

The Buyer's Edge is a consumer buying service that guarantees the lowest prices on most major purchases for our 2.5 million members in the tri-state area of NY, NJ, CT and Greater Philadelphia.

The Buyer's Edge has negotiated with, and maintains, a network of selected vendors. These vendors have agreed to give substantial discounts and the ironclad lowest price guarantee because, when dealing with a Buyer's Edge member, they do not have the normal advertising sales costs or other expenses.

The Buyer's Edge offers Buy-By-Phone program and, in certain categories and areas, a Buy-In-Person program.

Unique Features of the Buyer's Edge

- ◆ Guaranteed Lowest Prices on Major Consumer Purchases
- ◆ Convenient Buy-By-Phone or Buy-In-Person Programs
- ◆ Members call our vendors directly for price quotes and orders
- ◆ Our lowest price guarantee even extends to other buying services, advertised sales and other types of discount buying
- ◆ Member protection department immediately responds to reports of "less than superior service"
- ◆ Constant expansion and improvement of services

Check It Out Today!

IEEE North Jersey members can access Buyer's Edge online at <http://www.buyersedgeinc.com>. The North Jersey Section ID (also referred to as group #) and password are "1431" and "member1".



IEEE Power Engineering Society 1999 Winter Meeting

January 31 through February 4, 1999

**New York Hilton Hotel and Towers
At Rockefeller Center
1335 Avenue of the Americas
(Between 53rd and 54th Streets)
New York, NY**

The IEEE Power Engineering Society and the New York Chapter of the PES Society invite you to attend the 1999 IEEE PES Winter Power Meeting. This transnational conference will address the latest technology and developments related to power engineering and its industry.

You are encouraged to participate in your choice of approximately 400 events planned, including the technical sessions, panel discussions, poster paper sessions, tutorials, technical and society committee meetings, student-faculty-industry program, general membership meeting, awards ceremonies, technical tours, and an interesting and entertaining social program. Also take advantage of the many opportunities available in the New York area.

The meeting will begin on Sunday, January 31, with registration and an opportunity to meet old and new friends at a reception. The 4-day technical program, which has been developed by the PES Technical Committees, will begin on Monday morning February 1, with the opening at the General Membership Meeting followed by a Plenary Session. It will continue with technical, committee, tutorial and administrative sessions, tours, social events and a student program through February 4.

Prepaid Advanced Registration must be received no later than January 15, 1999. Registration requests received after this date will be processed at the conference at the higher on-site fees. Advance registration fees are: \$245 for IEEE/ASME members, \$375 for non-members and \$30 for companions. On site registration fees are \$295 for IEEE Members, \$425 for non-members and \$35 for companions. Non-members who join the IEEE and the Power Engineering Society at the time of conference registration will be permitted to register at the member rate.

Registration Forms may be found on the PES Society's Website at:

<http://www.ieee.org/power/subpages/meetings-folder/winter/99wmpreview.htm>

IEEE North Jersey Section Course

on

VISUAL BASIC 6.0

Tuesday and Thursday Evenings, February 23 – April 6, 1999

GEC Marconi

Plant 11, 164 Totowa Road, Totowa, NJ

The IEEE is offering an evening course entitled "Visual BASIC 6.0." This comprehensive course is intended for programmers migrating from procedural languages to "Visual BASIC." Prerequisites for the course are a familiarity with Windows 95, knowledge of a procedural language such as BASIC or C, and programming concepts, access to Microsoft Visual BASIC as well as Microsoft Windows 95 and Office 97. Upon completion, students will understand event driven programming; standard control objects and their associated properties, methods and events; have the ability to design application solutions. The course will run for 6 weeks. Each session will run for 2 ½ hours with a short break approximately in the middle. A textbook with a CD ROM and all text materials will be provided.

TOPICS

1. Introduction to Visual BASIC; Naming conventions; Creating a Graphical User Interface (GUI); Properties, Events and Methods for forms; Text Boxes, Command buttons and labels; Event procedures; Variable declarations; Environment options; Saving programs.
2. Scope; Code modules; Variables and constants; Built-in functions; Expressions and statements; Finite and dynamic arrays; Static variables; Procedures and functions; Passing data by reference or value; Program flow constructs.
3. Debug tools; Properties, events and methods for lines, shapes, check boxes, option buttons, frames, picture boxes and images; Toolbar; Status bar; Z Order; Control arrays.
4. Properties; events and methods for list boxes and combo boxes.
5. Properties, events and methods for horizontal/vertical scroll bars and timers.
6. Multiple form projects; Error trapping and handling.
7. Data manager and the data control; Data-aware controls; Grid control.
8. Multiple Document Interface (MDI) Forms; Menu design.
9. Keyboard events; Dynamic Link Libraries (DLL).
10. Clipboard; Shell function; Dynamic Data Exchange (DDE).
11. Object Linking and Embedding (OLE), OLE automation.

Class size will be limited to a maximum of 30 and minimum of 15. Early application is recommended. Telephone reservations will NOT be accepted. Applications postmarked after February 12th will require an additional late fee of \$25. No application will be accepted after February 23rd.

WHERE: GEC-Marconi, Plant 11, 164 Totowa Rd, Totowa NJ.

WHEN: Tuesdays and Thursdays, February 23 – April 6, 1999, 6:30-9:00 PM (no class April 1st).

COST: IEEE members \$265; Non-members \$380 including text book.

CONTACT: Bhanu Chivakula (973) 751-4879 (leave message) or Gabe Silberman at silberman@ieee.org.

REGISTRATION: VISUAL BASIC 6.0

To: Mr. Naz Simonelli, 68 Woodmont Drive, Randolph, NJ 07869-3740

Name: _____

☐ Nonmember

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

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 Feb. 13, 1999. 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 & payment are received.

☐ Tuition receipt will be mailed only if this box is checked

Signature: _____

IEEE North Jersey Section Seminar C/C++ WINDOWS PROGRAMMING

Monday Evenings, February 22 – May 10, 1999

Smiths Industries

7-9 Vreeland Road, Florham Park, NJ

The IEEE is offering an evening course entitled "C/C++ Windows Programming." This course will cover the creation of Microsoft Windows programs without needing the large compilers or the object libraries for Windows. You will require only Windows 3.1 or 95 and any Windows-compatible compiler. All programs will be compatible with C but C++ will also be used to simplify the interface.

This is a Windows course, not a programming course. Knowledge of C or C++ is a prerequisite. The emphasis is on other aspects of Windows application: standard look-and-feel, the design of help and make files, graphics (creating icons and cursors), program interlinking (cut and paste, DDE and OLE), and program installation (DDL's, INI, REG). We will also develop software tools to tame the complicated Windows environment interface and simplify the repetitive aspects of the development job. There will be 10 weekly lectures which will be quite interactive. Homework will be assigned and corrected. The specific topics listed below will be covered.

TOPICS

1. Review of Microsoft Windows from a developer perspective: The desktop metaphor. Constituents of a window. The mouse. Characteristics of different kinds of window objects. Use of the file manager. Use of the application window.
2. Nature of an interactive Windows program: winMain, event handlers. Files that make up a Windows program package. Constraints on a Windows program. Microsoft variable naming conventions.
3. Kinds of boxes: The dialog box, menu, accelerator keys, buttons (radio, check boxes, bitmapped buttons). Designing your own control boxes.
4. Other aspects of a Windows program package: creating icons. Creating Help. Concept of hypertext. Creating new cursor shapes. Saving program state from one execution to the next.
5. Creating output in your program: The device context. Print output. Pixel output. Bitmap files. Choosing, sizing, and using fonts.
6. Communication between tasks or applications: Passing data, the clipboard. More general communications, Dynamic Data Exchange (DDE). Using parts of one Windows program in another. Object Linking and Embedding (OLE).
7. Creating software tools to help development: Getting help on the windows interface itself. Creating repetitive code automatically.
8. How to create an install package for your Windows program. Special Windows 95 topics. Introduction to use of object libraries.

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 12 will require a late fee of \$25. No reservations will be accepted after Feb. 22.

WHERE: Smiths Industries, 7-9 Vreeland Road, Florham Park, NJ.

WHEN: 10 Sessions, Monday, February 22 through May 10, 1999, 6:30-9:00 PM.

COST: With text book only: IEEE members \$255; Non-IEEE members \$355.

CONTACT: Bhanu Chivakula (973) 751-4879 (leave message) or Gabe Silberman at silberman@ieee.org.

REGISTRATION: C/C++ WINDOWS PROGRAMMING

To: Mr. Naz Simonelli, 68 Woodmont Drive, Randolph, NJ 07869-3740

Name: _____

☐ Nonmember

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

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 Feb. 12, 1999. 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 & payment are received.

☐ Tuition receipt will be mailed only if this box is checked

Signature: _____