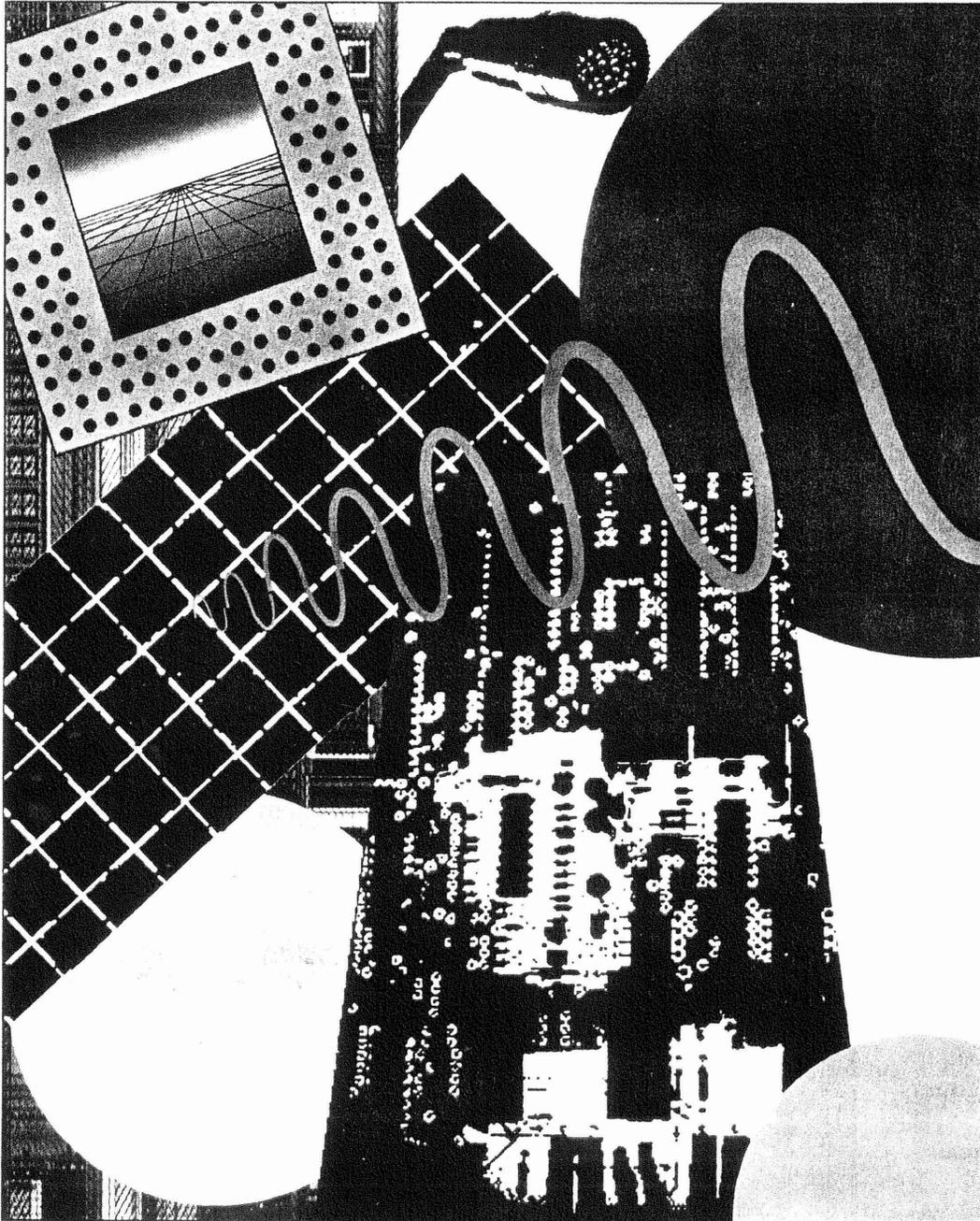


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Registration
Inside**

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Northcon is a joint venture of the Oregon and Seattle Sections, IEEE  Cascade Chapter, ERA  and the Electronics Manufacturers Association  Northcon/93 is endorsed by the Small Business Development Center of Portland Community College

SEMINAR 5

Programming the IEEE-488 Bus for ATE Applications

Tuesday, October 12, 1 pm to 5 pm



\$75 Pre-registration
\$100 after 9/17/93

This seminar is designed to help engineers improve their ability to use the IEEE-488 bus in ATE applications. The seminar consists of approximately one hour of lecture mixed with three hours hands-on workshop. The instruments, provided by John Fluke Mfg., include a DMM, an oscilloscope and arbitrary waveform generator. Programs will be written in C using National Instruments Lab Windows 2.1 environment. Topics will include:

- Using Lab Windows drivers to control instruments in C
- The signals on the IEEE-488 connector
- Universal and addressed multiline commands
- Taking advantage of the serial poll
- Synchronized measurements for faster testing
- Using advanced features of test equipment to decrease test time
- 488.2 and SCPI features

Knowledge of C and basic electronics is assumed for the seminar.

Instructor: David Willis
Oregon Institute of Technology,
Klamath Falls, Ore.

Mr. Willis received his BSEE from Utah State University in 1984 and MSEE from University of Arizona in 1989. He has worked in test-related fields for five years, including three years of ATE system design at Hughes Aircraft. Currently, he teaches a three-term senior-level course on the IEEE-488 and VXI busses at Oregon Institute of Technology.

SEMINAR 6a

Fuzzy Systems and Their Applications

Tuesday, October 12, 9 am to 12 pm

\$225 Pre-registration, 6a or 6b;
\$400 Pre-registration, 6a and 6b
\$260 after 9/17/93, 6a or 6b;
\$475 after 9/17/93, 6a and 6b

Originated nearly 40 years ago by Zadeh, fuzzy logic has, until the last few years, lived primarily on the

pages of journals. Recently, however, fuzzy logic concepts have been successfully applied to such diverse areas as train control, rice cookers, robotics, automatic camera focus, image processing, anti-skid devices, financial engineering, washing machines, carburetor tuning, automatic cruise control and sewage flow management. The recent explosion of applications of fuzzy logic is evidence of a paradigm shift in reasoning and engineering design. In this seminar, the fundamentals of applied fuzzy logic and reasoning will be presented. Specific attention will be given to fuzzy inference engines used in control and expert systems applications of fuzzy logic.

This seminar will be of interest to those interested in learning the fundamentals of fuzzy logic and the application of fuzzy systems in industry and manufacturing.

Instructor: Dr. Robert J. Marks, II
University of Washington,
Seattle, Wash.

Dr. Robert J. Marks, II, is a professor in the Department of Electrical Engineering at the University of Washington. Dr. Marks served as the first President of the IEEE Neural Networks Council and, in 1992, was given the honorary title of Charter President. He was named an IEEE Distinguished Lecturer in 1992. Dr. Marks is also a Fellow of the Optical Society of America. He is co-founder and current President of Multidimensional Systems Corp., Lynnwood, Wash., and is a co-founder of Financial Neural Networks, Inc., Kirkland, Wash. Dr. Marks is the Editor-in-Chief of the IEEE Transactions on Neural Networks, and serves as an Associate Editor of the IEEE Transactions on Fuzzy Systems. He also serves on the Editorial Board of the Journal on Intelligent Control, Neurocomputing and Fuzzy Logic, was the topical editor for Optical Signal Processing and Image Science for the Journal of the Optical Society of America-A, and served as a member of the Editorial Board for The International Journal of Neurocomputing. Dr. Marks is the Technical Program Director for the first IEEE World Congress on Computational Intelligence. He has two US patents in the field of artificial neural networks. He is the author of the book Introduction to Shannon Sampling and Interpolation Theory, and is editor of the companion volume, Advanced Topics in Shannon Sampling and Interpolation Theory.

SEMINAR 6b

Neural Networks and Their Applications

Tuesday, October 12, 1 pm to 5 pm

\$225 Pre-registration, 6a or 6b;
\$400 Pre-registration, 6a and 6b
\$260 after 9/17/93, 6a or 6b;
\$475 after 9/17/93, 6a and 6b

Artificial neural networks, modeled roughly after their biological counterpart, have been suggested in numerous different applications. The most commonly used neural networks are those that gain knowledge from experience. Experience is presented to the neural network in the form of training data. Once trained, the neural network can recognize data it has not seen before. Neural networks have found use in numerous fields, including speech recognition, stock market forecasting, mortgage brokering, power engineering and remote sensing. This seminar will provide a fundamental introduction to the manner in which neural networks work and how to use them to solve some important engineering problems.

This seminar will be of interest to those interested in learning the fundamentals of the most commonly used neural networks and how to apply them successfully.

Instructor: Dr. Robert J. Marks, II
University of Washington, Seattle,
Wash.

(See Seminar 6a for instructor's biography)

SEMINAR 7

Internal and Vendor Auditing to ISO 9000 Standards

Wednesday, October 13, 9 am to 5 pm

and

Thursday, October 14, 9 am to 5 pm

\$350 Pre-registration
\$400 after 9/17/93

This 2-day seminar provides education training and practical guides for the implementation of the Internal (and Vendor) Auditing function of Quality Management and Quality Assurance Systems to assist manufacturers in satisfying the requirements of section 4.17 Internal Quality Audits of ISO 9001 and section 4.16 Internal Quality Audits of ISO 9002 Standards. This seminar consists of lecture, discussion, group activities and a mock audit. It is designed to assist quality managers, audit managers, lead auditors, and inspectors in carrying out their responsibilities to ISO standards. The topics and activities covered are:

- A review of the evolution of quality standards
- Auditor roles, responsibilities and activities
- Planning and scheduling internal and vendor audits
- Conducting effective audits
- Finding and reporting noncompliances
- Conducting corrective action follow-ups
- Reporting of audit results to departments and management
- Review of Guidelines for Auditing Quality Systems (ISO 10011-1)
- Preparing for external auditors, what they will be looking for
- Tips for audit guides to prepare them for external auditors
- A mock audit of a manufacturing facility to ISO 9000 requirements

Instructors: Jon Potts and Jeff Stoll
Quality Systems Inc.,
Oregon City, Ore.

Mr. Potts has been working in the quality field for nine years and as a quality consultant for seven of those years. He has a B.S. from Brigham Young University and an M.S. from the University of New Hampshire. He has taught several courses in Statistical Process Control as adjunct faculty at the OIT Metro Campus in Portland, Ore. He is a member of the ASQC and is recognized by them as a certified quality engineer. He has taken an approved (IQA & RAB) 36-hour Lead Assessor training and has a certificate of completion.

Mr. Stoll has worked in both reliability and quality assurance engineering. He has a BSEET from the Oregon Institute of Technology. He has worked in the quality and reliability field for over 12 years. He has extensive experience in design and design reviews. He has taken an approved 36-hour Lead Assessor training and has a certification of completion.

SEMINAR 8

From Ohm's Law to Microprocessors: Basic Electronics for Purchasing, Sales, Production and Support Personnel

Wednesday, October 13, 9 am to 5 pm

and

Thursday, October 14, 9 am to 5 pm

\$350 Pre-registration
\$400 after 9/17/93

This comprehensive 2-day program on basic electronics and state-of-the-art technologies will offer:

- Information on how electronics components work, as well as how, why, and where they are used in electronic equipment systems.