IEEE Validation of the Continuing Education Achievement of Engineers Registry System. Procedures for Use with a CPT 8000 Word Processor and Communications Package.

Institute of Electrical and Electronics Engineers, Inc., New York, N.Y.

National Science Foundation, Washington, D.C.

1 Mar 82

NSF/SED-82005; SED-79-18989

EDRS PRICE MF01/PC09 Plus Postage.

*Academic Achievement; Educational Attainment; Educational Certificates; *Electronics; *Engineering Education; Higher Education; *Information Services; Postsecondary Education; *Professional Continuing Education; *Student Participation

*Electrical Engineering

The Institute of Electrical and Electronics Engineers (IEEE) validation program is designed to motivate persons practicing in electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor. The rapid acceptance of the validation program necessitated the additional development of a system to handle course attendance and participant information data. This system (1) records course registrations, attendances, credit accumulations, and participant evaluations and sponsors' course status; (2) confirms participants' acceptable performances and course attendance for non-IEEE courses; (3) monitors IEEE's technical interest evaluations of course offerings, participants' course evaluation, and participation statistics; and (4) generates mailing labels and other items such as transcripts and Course Credit Award Certificates. Included in this document are registry system procedures and related materials (sample input cards, questionnaires, award certificates, transcripts). Supporting documentation, including a system description of the IEEE Continuing Education Registry (samples of computer generated letters, enclosures and data processing plans), explanatory notes and statistical tables relating to an IEEE mail survey, and IEEE Continuing Education Registry course evaluation questionnaire results are included in each of three appendices. (Author/JN)
IEEE VALIDATION
OF THE
CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
REGISTRY SYSTEM

* * *

PROCEDURES

FOR USE WITH A CPT 8000 WORD PROCESSOR

AND

COMMUNICATIONS PACKAGE

* * *

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS

Purpose

The basic purpose of the IEEE validation program is to motivate persons practicing electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor.

Quality

The quality of each IEEE course is assured through two levels of evaluation: peer evaluation by appropriate representation of IEEE's Technical Interest and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant’s learning accomplishment must be evaluated.

Recognition

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE Continuing Education Achievement Units (CEAUs). Courses completed without an evaluation of a participant’s learning accomplishment or completed with an unacceptable performance will be awarded an IEEE Certificate of Merit or the Sponsor’s credit units.

The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the “Validation of the Continuing Education Achievement of Engineers Registry.”

All program participants may request transcripts of their continuing education record.

Motivation

Many practitioners need the information available in senior college elective technical courses, but they do not receive recognition for acceptable performance unless they are seeking an advanced degree.

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course.
- IEEE recognition of quality courses within the scope of the Institute’s technical expertise.
- An up-to-date transcript of each participant’s completed continuing education courses from any responsible sponsor using any educational media.
- An aid to Career Planning.

Participation

“Plan Now To be a part of this program”

John F. Wilhelm, Staff Director Educational Services

Additional Information

Write to: IEEE “Validation of the Continuing Education Achievement of Engineers Registry” 445 Hoes Lane Piscataway, New Jersey 08854

(This is a photocopy of an information leaflet)
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PREFACE

The National Science Foundation, through the Science Education Development and Research Division of the Science Education Directorate, provided a two-year Grant to the Institute of Electrical and Electronics Engineers, IEEE, to establish a model system for the Validation of the Continuing Education Achievement of Engineers. The Grant was effective 15 September 1979 with Dr. Roy H. Mattson, University of Arizona, as the Project Director.

IEEE had designed, developed and initiated the dissemination of a fully operational model system by 1 March 1980. The rapid acceptance of the model system necessitated the additional development of a cost effective input processing scheme to handle the exponential growth of course attendance and participant information data. At the end of the two-year Grant period, 15 September 1981, all input data was being processed via a CPT-8000 Word Processor and a Telecommunication link to an off-site Data Base that is being maintained on an IBM 3033 Central Processing Unit by Neshaminy Valley Information Processing located in Trevose, Pennsylvania.

The IEEE Validation & Registry System is a modification of the NSF funded Model to meet the specific requirements of the IEEE Educational Activities Board's Continuing Education Program.

Many colleagues and organizations have contributed to the development of this IEEE Validation & Registry System, in particular, John F. Wilhelm, IEEE Staff Director Educational Services, Fern E. Katronetsky, IEEE New York staff, Marion P. Branagan, Carolyn A. Yankoski, Robert G. Wiezien, IEEE Piscataway staff, Philip R. Bagley and Frank J. Zigman, Context, Inc.

J. E Casey, P.E.
Project Manager

1 March 1982
WHAT THE SYSTEM DOES

- RECORDS:
  - Course Registrations.
  - Course Attendances and Credit Accumulations.
  - Course Participant Evaluations.
  - Sponsors' Course Status.

- CONFIRMS:
  - Participant's Acceptable Performances.
  - Course Attendances for Non-IEEE Courses.

- MONITORS:
  - IEEE's Technical Interest Evaluations of Course Offerings.
  - Participant's Evaluation of Completed Courses.
  - Participation Statistics.

- GENERATES:
  - Stationery, Transmittal Letters, Authorized Signatures, Transcripts, Course Credit Award Labels, and all documents that are necessary for each input transaction.
  - Selective Mailing Labels.
DATA AVAILABLE TO PARTICIPANTS

- Current Transcript of completed Continuing Education Courses.

- Certificate of Achievement and Course Credit Award Label for acceptable performance in completed IEEE peer evaluated and other accepted courses.

- Certificate of Merit for completion of an IEEE course without an evaluation of performance.

- Additional Transcripts available to the participant upon request.

- List of courses started but not completed.

DATA AVAILABLE TO SPONSORS

- Rosters of Course Registrations.

- Course Participants' Evaluations of completed course offerings.

- Listing of course offerings attended and completed by Registry participants.

- Listing of course offerings evaluated and accepted by an IEEE Technical Interest Review.

- Trends of Course Participant Evaluations.
IEEE VALIDATION
OF THE
CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
REGISTRY SYSTEM

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PROCEDURES

FOR USE WITH A CPT 8000 WORD PROCESSOR
AND
COMMUNICATIONS PACKAGE

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3-01-82
CPT PROCESSING OF IEEE
VALIDATION & REGISTRY INPUTS

Introduction

The IEEE Validation & Registry System permits the entry of all IEEE Course Registration, payment, completion, change and deletion transactions that meet the specific needs of IEEE's Educational Activities Board.

The IEEE criteria for awarding CEUA's and IEEE Certificates is assumed as the modus operandi for IEEE-EAB or any IEEE entity that will award IEEE Certificates and/or IEEE Course Credit Award Labels prepared by the IEEE Educational Services Department, New York, N.Y.

Processing IEEE Participant and/or IEEE Course Attendance Information.

The IEEE Validation & Registry System has been designed to accept CPT Data Transmission System Format inputs that meet the needs of IEEE-EAB Short, Video and Home Study Course offerings.

There are 4 types of records in the IEEE Validation & Registry System....

(1) Participant Information Records.
(2) Participant Course Attendance Records.
(3) Sponsor Records.
(4) Course Description Records.

IEEE COURSE REGISTRATION PROCEDURE

When the IEEE course participant's information is initially entered into the System any one of seven (7) transaction letters can be requested to document the unique characteristics of the IEEE course participant's registration.

THE SPECIAL REQUEST FIELD OF THE SYSTEM FORMAT IS USED TO INITIATE THE APPROPRIATE REGISTRATION TRANSACTION LETTER. IF NO TRANSACTION LETTER IS REQUIRED, ENTER 99 IN THE SPECIAL REQUEST FIELD 0.

REQUEST ONLY ONE TRANSACTION LETTER EACH TIME AN IEEE COURSE PARTICIPANT'S REGISTRATION INFORMATION IS ENTERED INTO THE SYSTEM.

The seven (7) transaction letters are attached and constitute letters CE:15, CE:16, CE:17, CE:18, CE:19, CE:20, CE:21.

FOR IEEE SHORT COURSE REGISTRATIONS, ONE OF THESE TWO (2) LETTERS WOULD BE GENERATED:

CE:15 "Short Course Registration Reply - NOT PAID."
CE:16 "Short Course Registration Reply - ADVANCED PAYMENT PURCHASE ORDERS."
FOR IEEE HOME STUDY COURSE REGISTRATIONS EXCEPT TECHNICALLY WRITE!, THE LETTER GENERATED WOULD BE:

CE:17 "Home Study Course Registration Reply-ADVANCED PAYMENT/PURCHASE ORDER (EXCEPT HS9001 TECHNICALLY WRITE!)."

FOR TECHNICALLY WRITE! A SELECTION FROM THESE FOUR (4) LETTERS WOULD BE GENERATED:

CE:18 "Home Study Registration Reply-ADVANCED PAYMENT/PURCHASE ORDER for HOME STUDY HS9001 TECHNICALLY WRITE! ONLY."
CE:19 "Home Study Course HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT (U.S. AND CANADA)."
CE:20 "Home Study Course HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT FOR FOREIGN STUDENTS ONLY (CANADA NOT INCLUDED)."
CE:21 "Home Study Instructor Packet Transmittal Letter."

EXAMPLES COVERING METHOD OF PAYMENT FOR ALL IEEE COURSE REGISTRATIONS (SHORT COURSE, HOME STUDY, VIDEO).

Typical line insertion covering method of payment - (examples)....

Payment by check would appear as:

CK#1234 $150 10-26-81

Payment by Credit Card would appear as:

CC#2109-876-129-542 $150 10-26-81

Payment by Purchase Order would appear as:

PO#01114 $150 10-26-81
IEEE COURSE COMPLETION PROCEDURE

Having initiated the IEEE Course Registration Procedure, the IEEE Validation & Registry System now contains all pertinent IEEE course registration, participant and payment information except for the completion date, earned credit, units and evaluation.

Therefore, to implement the IEEE Course Completion Procedure and the automatic selection of the appropriate IEEE certificate and/or course credit award label, transmittal letter and transcript, the ADDITIONAL information which must be entered into the System is transaction code !cc. Be sure to include:

- Participant Number
- Sponsor Code
- Course Number
- Completion Date
- Number of Credits
- Credit Units
- Confirmation Code "i"
- Evaluation (when available)

CAUTION:

An !pi transaction code MUST be used for a course completion when the participant is NOT presently in the Data Base.

NOTE:

The confirmation Code "i" MUST BE implemented at the time of entering the course completion information to automatically initiate the appropriate IEEE course completion letters. The "i" officially confirms that the completion procedure is for an IEEE-EAB Course. NO SPECIAL LETTER REQUEST IS NECESSARY.

See attached transmittal letters CE:01, CE:02, CE:03, CE:04, CE:09.

CE:01 "IEEE Sponsored Course Initial IEEE Certificate of Achievement and Course Credit Award Label - CEAU Transaction."
CE:02 "IEEE Sponsored Course Credit Award Label - CEAU Transaction."
CE:03 "IEEE Sponsored Course An Additional Certificate of Achievement and Course Credit Award Label - CEAU Transaction."
CE:04 "IEEE Sponsored Course IEEE Certificate of Merit Transaction." (Course without CEAs.)
CE:14 "Transcript Transaction." (Includes CE:09 Transcript.)
IEEE CRITERIA FOR AWARDING CEAU's AND IEEE CERTIFICATES

MODUS OPERANDI:
The IEEE Validation & Registry System requires that all course sponsors recognize and implement the built-in system criteria for granting CEAU's and awarding IEEE Certificates.

Granting CEAU's:
CEAu's will be granted to continuing education participants who have successfully completed and passed an achievement testing of course content sponsored by--
-- IEEE-EAB or any IEEE entity that implements an IEEE peer evaluated course offering.
-- An ABET accredited department for regular courses taken as non-credit.

Awarding IEEE Certificates:
IEEE Certificates will be awarded to continuing education participants who complete a course sponsored by IEEE-EAB or any IEEE entity as directed by IEEE's Educational Activities Board.
-- An IEEE Certificate of Achievement and/or an appropriate course credit award label will be awarded to the continuing education participant who completes an IEEE peer evaluated course offering and successfully passes an achievement testing of the course content.
-- An IEEE Certificate of Merit will be awarded to the continuing education participant who completes the IEEE peer evaluated course offering and elects not to take or does not pass an achievement testing of the course content.

ABET Exception: To maintain the security of the IEEE Validation & Registry System and the awarding of CEAU's by an ABET Accredited Department requires a special flag to confirm participant and course attendance information. The flag that connotes confirmed ABET accredited department regular course attendances that have been taken by a participant as non-credit appears in the data bank as "a". Therefore, the confirmation code "a", participant number, sponsor code, course number, course completion date, non-degree credits, type of units, evaluation (when available), and a successfully completed/passed participant performance must be entered into the System to implement a CEAU credit transaction for ABET Accredited Department non-degree course offerings.

AN ABET CEAU TRANSACTION DOES NOT GENERATE THE IEEE LETTER LOGIC AND IS SEPARATE FROM IEEE CEAU STATISTICS.

NOTE:
Non-IEEE-EAB course participant and course attendance information can be processed as tentative and will appear as "course attendance and credits not confirmed. Non-IEEE-EAB System inputs will require confirmation action by the course sponsor/coordinator/instructor before the information is noted as official. The flag that connotes Non-IEEE-EAB course sponsor/coordinator/instructor confirmed information appears in the data bank as "c".
CPT - DATA PROCESSING, LETTER GENERATION AND DISTRIBUTION PROCEDURE

The processing of all data and letters relating to the IEEE Validation & Registry System's transactions are implemented through a CPT-8000 Word Processor, a Racal Vadic VA3455 Modem via a telecommunications link to an IBM 3033 Central Processing Unit, programmed in PL1, and an IBM 3800 Laser Printer at the Neshaminy Valley Information Processing, located in Trevose, Pennsylvania.

When signaled by IEEE Educational Services in NEW YORK, N.Y., or PISCATAWAY, N.J., this automated system will generate all of the appropriate IEEE transactions or transmittal letters, and deliver them to Context, Inc., Philadelphia, Pa., where the materials are given a quality control check, collated and distributed as follows:

-- All Non-IEEE transaction or confirmation request letters and IEEE transcript requests will be mailed direct through the satellite facilities of Context, Inc.

-- All IEEE transaction and transmittal letters, will be collated and distributed as follows...
  - IEEE Short Course Registrations using letter 15 or 16 will be delivered to IEEE Educational Services, Piscataway, N.J.
  - All IEEE Home Study or Video Course Registrations and Instructor Transmittals using letters 17, 18, 19, 20, or 21, will be delivered to IEEE Educational Services, New York, N.Y.
  - All IEEE Course Completion Transmittal letters CE:01, 02, 03, 04, with 09, and when appropriate Course Credit Award Labels, will be delivered to IEEE Educational Services, New York, N.Y.

PRIMARY SYSTEM IDENTIFICATION FOR PARTICIPANT RECORDS

The primary system identification for a Participant Record in the IEEE Continuing Education Validation & Registry System is the IEEE Member Number or the Participant's Non-Member Number as assigned by IEEE Education Services' staff.

  - If the transaction is an IEEE Home Study or Video Course, send to IEEE Educational Services, New York, N.Y.

  - If the transaction is an IEEE Short Course, send to IEEE Educational Services, Piscataway, N.J.

  - If the transaction is a Non-IEEE Course, send to IEEE Special Projects, Piscataway, N.J.

Before entering an addition, change or deletion transaction into the IEEE Validation & Registry System, please observe the following:

TO DETERMINE A PARTICIPANT'S IEEE MEMBER OR NON-MEMBER NUMBER, CHECK THE CURRENT REGISTRY PRINT-OUTS OR DATA BASE EDITORIAL LISTS TO SEE IF THE PARTICIPANT IS ALREADY IN THE SYSTEM; IF FOUND, USE THE SAME NUMBER.

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WHEN THE COURSE PARTICIPANT IS AN IEEE MEMBER, scan all the alphabetized and numerical listings that are presently recorded in the IEEE Validation & Registry System. If NOT FOUND, then interrogate the IEEE Membership Data Base for the IEEE Member’s Number.

WHEN THE COURSE PARTICIPANT IS A NON-MEMBER, scan all the alphabetized and numerical listings that are presently recorded in the IEEE Validation & Registry System. If FOUND in the IEEE Validation & Registry System, use the Non-Member Participant Number that has already been recorded in the IEEE Validation & Registry System.

WHEN YOU CANNOT LOCATE A NON-MEMBER PARTICIPANT’S NUMBER, scan all the non-member numerical listings, note the last assigned non-member number and CREATE a new non-member number from the following series:

-- For an IEEE Home Study or Video Course, assign non-member numbers in the NO6XXXX series.
-- For an IEEE Short Course, assign non-member numbers in the NO4XXXX series.
-- For a Non-IEEE Course, assign non-member numbers in the NO2XXXX series.

BEFORE ANY CPT TRANSMISSION, assuming the information is on a CPT disk, PRINT OUT AN IEEE FILE RECORD OF THE INFORMATION that will be transmitted. Date the IEEE file copy and note on the copy the time of the transmission.

PROCEDURE FOR INITIATING A CPT TRANSMISSION TO THE DATA PROCESSING CENTER:

-- A communications program disk is used to program the CPT8000 for communicating with the Computer at the Data Processing Center. A check of the program recorded on the Communications Disk F4 can be made on the CPT keyboard by keying in label IBM (if PISCATAWAY) -or- C-Test (if New York). The following information should appear on the CPT screen.

<table>
<thead>
<tr>
<th>COMMUNICATIONS.</th>
<th>C-Test will also show:</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE: 1200</td>
<td></td>
</tr>
<tr>
<td>TRANSMISSION CODE SET: 1</td>
<td>C-ASCII.T1 C-ASCII.T2</td>
</tr>
<tr>
<td>RECEPTION CODE SET: 1</td>
<td>C-ASCII.R</td>
</tr>
<tr>
<td>EVEN PARITY</td>
<td></td>
</tr>
<tr>
<td>LINE PAUSE: 99</td>
<td></td>
</tr>
</tbody>
</table>

-- BEFORE TRANSMISSION THE CPT MUST BE PROGRAMMED AS FOLLOWS:
1. Reset the CPT.
2. Load the Communications Disk F4 into CPT Station 1, wait a few seconds for the screen to light up.
3. Depress CODE Key and letter I Key, the screen will read CONTROL 1, type in IBM (if PISCATAWAY) -or- C-TEST (if NEW YORK), wait a few seconds and TTY COMMUNICATIONS ENABLED will appear on the screen. At this point, depress CODE Key and letter K Key.. the screen will read SELECT.. then Key carriage return, the screen will read TRANSMISSION.. then Key carriage return, the screen will read KB+SCREEN..then Key carriage return, the screen will read TTY COMMUNICATIONS ENABLED.
4. Remove the Communications Disk F4 from the CPT Station 1.
5. Then place into the CPT Station 1, the CPT Disk that has recorded on it the information to be transmitted.

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TRANSMISSION OF IEEE COURSE REGISTRATIONS OR IEEE COURSE COMPLETIONS FROM IEEE EDUCATIONAL SERVICES, PISCATAWAY, N.J.

Assuming that the appropriate IEEE Course Participant and Attendance Information has been previously recorded on a CPT-8000 Word Processor disk using the System Format, the following applies:

After the CPT-8000 has been programmed and is in the "Communications Enabled" mode, a call on the Modem phone should be placed to (212-683-6325); when the communication signal (a steady tone) is received depress the Modem Phone's white hook switch half way (a double steady tone is heard) then begin typing TRETSO and key carriage return. When the message on the CPT screen reads:

```
WELCOME TO NVIP
PLEASE SIGN ON
```

For Short Courses

```
LOGON(space)E776/PASSWORD(space)ACCT(*CYNJ) and key carriage return.
```

For Non-IEEE Courses

```
LOGON(space)E776/PASSWORD(space)ACCT(*MPB1) and key carriage return.
```

After several lines of acknowledged messages from the Computer, the CPT screen will then read: READY (This means you have logged onto the Computer.)

```
QED SYSB.Nkk.text new Line(80) and key carriage return.
(Nkk is a Sequence number assigned by IEEE Educational Services, Piscataway, N.J.)
```

The computer will continue with a Computer-generated INPUT number (line number). You are now ready to transmit information from a pre-recorded CPT disk. Then Key IN, type page label and key carriage return. Then depress LINE, CODE and UP keys. A cursor/pointer will run across each line as it transmits information putting a series of numbers before each line.

After every five (5) INPUTS, key carriage return. The Computer will respond with...QED. Type... save. The Computer will respond with... SAVED. Key carriage return and the Computer will respond with INPUT and a line number, i.e., INPUT 00010

TO TRANSMIT RECORDINGS, THE SYSTEM MUST BE IN THE INPUT MODE.

When the screen is full, page down and skip; call in next record and continue your transmission, repeating page down and skip at the end of each full page until completed.

At the end of the QED transmission, key carriage return and type save.

```
The Computer will display on the CPT screen.... SAVED
Type END SAVE and the Computer will display on the CPT screen ... SAVED READY
```

```
QED SYSB.Nkk.text new Line(80) and key carriage return.
```

Printoff (followed by the assigned text sequence number) SYSB.Nkk.text and key carriage return. The Computer will acknowledge and print the contents of the transmission at the Data Processing Center. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on CPT screen...

```
READY
```

```
LOGOFF and key carriage return to get off the Computer.
```

At the end of the transmission, the CPT screen will read....

```
LAST STEP COMPLETION CODE WAS USER_0
```

3-01-82
TRANSMISSION OF IEEE COURSE REGISTRATIONS OR IEEE COURSE COMPLETIONS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y.

Assuming that the appropriate IEEE Course Participant and Attendance Information has been previously recorded on a CPT-8000 Word Processor disk using the System Format, the following applies:

After the CPT-8000 has been programmed and is in the "Communications Enabled" mode, a call on the Modem 'phone should be placed to (212-683-6325); when the communication signal (a steady tone) is received depress the Modem Phone's white hook switch half way (a double steady tone is heard) then begin typing TRETSO and key carriage return. When the message on the CPT screen reads:

```
WELCOME TO NVIP
PLEASE SIGN ON
```

For Home Study/Video(N.Y.)

TYPE...
LOGON(space)E776/PASSWORD(space)ACCT(*FKNY) and key carriage return.

After several lines of acknowledged messages from the computer, the CPT screen will then read: READY (This means you have logged onto the computer.)

TYPE....
QED SYSY.Nkk.text new Line(80) and key carriage return.

(Nkk is a Sequence number assigned by IEEE Educational Services, New York, N.Y.)

The computer will continue with a Computer-generated INPUT number (line number). You are now ready to transmit information from a pre-recorded CPT disk. Then Key IN, type page label and key carriage return. Then depress LINE, CODE and UP keys. A cursor/pointer will run across each line as it transmits information putting a series of numbers before each line.

After every five (5) INPUTS, key carriage return. The Computer will respond with...QED. Type... save. The Computer will respond with...SAVED. Key carriage return and the Computer will respond with INPUT and a line number, i.e., INPUT 00010

TO TRANSMIT RECORDINGS, THE SYSTEM MUST BE IN THE INPUT MODE.

When the screen is full, page down and skip; call in next record and continue your transmission, repeating page down and skip at the end of each full page until completed.

At the end of the QED transmission, key carriage return and type save.

The Computer will display on the CPT screen.... SAVED
Type END SAVE and the Computer will display on the CPT screen ... SAVED READY

TYPE....
Printoff (followed by the assigned text sequence number) SYSB.Nkk.text and key carriage return. The Computer will acknowledge and print the contents of the transmission at the Data Processing Center. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on CPT screen...

```
READY
```

TYPE....
LOGOFF and key carriage return to get off the Computer.
At the end of the transmission, the CPT screen will read....

```
LAST STEP COMPLETION CODE WAS USER 0
```

3-01-82
TO INITIATE A PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y.

Type...
LOGON E776/PASSWORD ACCT(*PRFK) and key carriage return.

Response will be...
READY

Type...
IEEEFERN and key carriage return.

*Response will be...
IEEE FERN PRODUCTION (NO FULL LISTS)
JOB SUBMITTED FOR EXECUTION.
READY

Type...
LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...
LAST STEP COMPLETION CODE WAS USER 000

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y. stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. Additionally, a second copy of these editorial lists and rosters will be sent to IEEE Educational Services, PISCATAWAY, N.J. When available, copies of NEW YORK transmission print-offs will be sent to NEW YORK, N.Y.

*NOTE: (for IEEEFERN)
Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off—no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEEFERN file listings can on, be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

3-01-82
TO INITIATE A PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE EDUCATIONAL SERVICES, PISCATAWAY, N.J.

Type...
    LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.

Response will be...

    READY

Type...
    IEEESHRT and key carriage return.

*Response will be...

    IEEE PISCATAWAY PRODUCTION (NO FULL LISTS)
    JOB SUBMITTED FOR EXECUTION.
    READY

Type...
    LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

    LAST STEP COMPLETION CODE WAS USER 000

This procedure will implement appropriate productions from all IEEE Educational Services, PISCATAWAY, N.J. stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. Additionally, a second copy of these editorial lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y. When available, copies of NEW JERSEY transmission print-offs will be be sent to PISCATAWAY, N.J.

*NOTE: (for IEEESHRT)
Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEESHRT file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).
TO INITIATE A SPECIAL PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE
EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...
LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.
Response will be...
READY

Type...
IEEESHNY and key carriage return.
*Response will be...
IEEE SHNY PRODUCTION (NO FULL LISTS)
JOB SUBMITTED FOR EXECUTION
READY

Type...
LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

LAST STEP COMPLETION CODE WAS USER 000

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J., stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. All lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J. When available, copies of NEW YORK transmission printoffs will be sent to NEW YORK, N.Y., and copies of NEW JERSEY transmission printoffs will be sent to PISCATAWAY, N.J.

*NOTE: (for IEEESHNY)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEESHNY file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

3-01-82
TO INITIATE A PRODUCTION RUN WITH EDITORIAL AND FULL PARTICIPANT/COURSE ATTENDANCE LISTS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...
LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.

Response will be...
READY

Type...
IEEEFULL and key carriage return.

*Response will be...
IEEE FULL PRODUCTION
JOB SUBMITTED FOR EXECUTION
READY

Type...
LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...
LAST STEP COMPLETION CODE WAS USER 000

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J., stored transmissions and produces all editorial, full participant/course attendance lists and IEEE non-completed course rosters. All lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J. When available, copies of NEW YORK transmission printoffs will be sent to NEW YORK, N.Y., and copies of NEW JERSEY transmission print-offs will be sent to PISCATAWAY, N.J.

*NOTE: (for IEEEFULL)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEEFULL file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

3-01-82
- 12 -
TO INITIATE THE PRODUCTION OF ALL EDITORIAL, PARTICIPANT/COURSE ATTENDANCE LISTS WITHOUT A PRODUCTION RUN FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...
    LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.

Response will be...
    READY

Type...
    IEEELIST and key carriage return.

*Response will be...

    IEEE FILE LISTINGS
    JOB SUBMITTED FOR EXECUTION
    READY

Type...
    LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

    LAST STEP COMPLETION CODE WAS USER 000

This procedure will produce all the editorial and full participant/course attendance lists WITHOUT A PRODUCTION RUN. All lists will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J.

*NOTE: (for IEEELIST)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEELIST file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-286-7100 (F. Zigman or P. Bagley).

3-01-82 - 13 -
## SUMMARY OF OUTPUTS AND DISTRIBUTIONS FOR IEEE PRODUCTIONS

<table>
<thead>
<tr>
<th>Outputs</th>
<th>IEEEFULL</th>
<th>IEEEESNY</th>
<th>IEEEFERN</th>
<th>IEEEESHR</th>
<th>IEEELIST</th>
</tr>
</thead>
</table>
| Sponsor & Participant Master File Update Logs | 1 Copy N.Y.  
1 Copy N.J.  
1 Copy Context | SAME    | SAME     | SAME     | NONE     |
| Sponsor & Participant Full Listings          | 1 Copy N.Y.  
1 Copy N.J. | NONE    | NONE     | NONE     | 1 Copy N.Y.  
1 Copy N.J. |
| Participant Letters                          | Ltrs.1-4 & 9:NY  
Ltrs.15 & 16:NJ  
Ltrs.17-21:NY  
All others:REI via Context | SAME    | SAME     | SAME     | NONE     |
| Error Listings                                | 1 Copy N.Y.  
1 Copy N.J.  
1 Copy Context | SAME    | SAME     | SAME     | SAME     |
| Participant Summary Listings                  | 1 Copy N.Y.  
1 Copy N.J. | SAME    | SAME     | SAME     | SAME     |
| Sponsor/Course Summary Listings & Rosters     | 1 Copy N.Y.  
1 Copy N.J. | SAME    | SAME     | SAME     | SAME     |
| Letter Summary                                | 1 Copy N.Y.  
1 Copy N.J.  
1 Copy Context | SAME    | SAME     | SAME     | NONE     |
| Print-offs (When available.)                  | 1 Copy N.Y.  
Transmission Print-offs sent to N.Y.  
1 Copy N.J.  
Transmission Print-offs sent to N.J. | SAME    | SAME     | SAME     | NONE     |
INDEX OF FILE & EDITORIAL OUTPUTS

- Full Participant Information/Course Attendance File
- Full Sponsor/Course File
- Summary - Participant Attendance by Name
- Sponsor and Courses by Sponsor
- Sponsor by Number
- Courses by Title
- Courses by Class Code
- Institutions of First Degree by Name
- Institutions of First Degree by Number
- Summary IEEE Participants by Number
- Summary Non-IEEE Participants by Number
- Award Label Titles
- Participant Summary List Makeup
- Sponsor Summary List Makeup
- Duplicate Participant/Attendance Names
- Participant/Attendance File Update Transaction Report
- Sponsor/Course File Update Transaction Report
- Letters sent for IEEE
- Non-Completed Courses
- Transmission Printouts
- Participant Name/ID# Index
- Sponsor Name/ID# Index
- Course Name/ID#/TIP Index
LIST OF TRANSACTION CODES

- **!pi** Participant Information -
  New participant, new attendance data or both.

- **!pc** Participant Change -
  A change of participant information or attendance information or both.

- **!si** Sponsor Information -
  New sponsor information and/or course information.

- **!sc** Sponsor Change Information or Course Change Information or both.

- **!cl** Confirmation Letter -
  Key information from Letter :07 - then enter on Line 6 one of these codes....

  "c" Confirmed by sponsor/coordinator/instructor.
  "i" Confirmed by IEEE-EAB.
  "a" Confirmed by an ABET accredited department.

- **!pd** Participant Deletion.
- **!ad** Attendance Deletion.
- **!sd** Sponsor Deletion.
- **!cd** Course Deletion.
- **!tr** Transcript Request.
- **!pc** Special Letter Request.
- **!cc** Course completion.

**CAUTION**

DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center.

WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. THEN transmit the !cc completion entry transaction for the participant.

3-01-82 - 16 -
## PARTICIPANT INFORMATION

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>IEEE MEMBER NO.</td>
<td>12345678</td>
</tr>
<tr>
<td>b</td>
<td>NAME (Mr./Mrs., etc.) First Middle Initial Last (Jr., Ph.D., etc.)</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>ADDRESS</td>
<td>123 Main St.</td>
</tr>
<tr>
<td>d</td>
<td>CITY</td>
<td>Boston</td>
</tr>
<tr>
<td>e</td>
<td>STATE</td>
<td>MA</td>
</tr>
<tr>
<td>f</td>
<td>ZIP CODE</td>
<td>02110</td>
</tr>
<tr>
<td>g</td>
<td>TELEPHONE NO.</td>
<td>123-456-7890</td>
</tr>
<tr>
<td>h</td>
<td>BUSINESS</td>
<td>Yes/No (Check one)</td>
</tr>
<tr>
<td>i</td>
<td>HOME</td>
<td>Yes/No (Check one)</td>
</tr>
</tbody>
</table>

## COURSE ATTENDANCE

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>SPONSOR ABET ACCREDITED</td>
<td>Yes/No (Check one)</td>
</tr>
<tr>
<td>q</td>
<td>COURSE SPONSOR</td>
<td>Institution Name or IEEE entity</td>
</tr>
<tr>
<td>r</td>
<td>Course Coordinator/Instructor First Middle Initial Last</td>
<td></td>
</tr>
<tr>
<td>s</td>
<td>ADDRESS</td>
<td>City State Zip Code</td>
</tr>
<tr>
<td>t</td>
<td>HOME STUDY</td>
<td>Yes/No</td>
</tr>
<tr>
<td>u</td>
<td>TELEPHONE NO.</td>
<td>123-456-7890</td>
</tr>
<tr>
<td>v</td>
<td>COURSE NUMBER</td>
<td>12345</td>
</tr>
<tr>
<td>w</td>
<td>DATE COMPLETED</td>
<td>01/01/2023</td>
</tr>
<tr>
<td>x</td>
<td>WHERE HELD</td>
<td>Address</td>
</tr>
<tr>
<td>y</td>
<td>ADDRESS (Blank if Home Study)</td>
<td>123 Main St.</td>
</tr>
<tr>
<td>z</td>
<td>CITY</td>
<td>Boston</td>
</tr>
<tr>
<td>A</td>
<td>STATE</td>
<td>MA</td>
</tr>
<tr>
<td>B</td>
<td>NON DEGREE CREDITS</td>
<td>10 CEU</td>
</tr>
</tbody>
</table>

**For IEEE use only.**

6. TYPE OF UNIT (CEU, HRS., CEAU, etc.)

**IMPORTANT:** Please print or type.

**PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM**
COURSE EVALUATION QUESTIONNAIRE

PLEASE respond to each statement.

NOTE: WHEN ENTERING COURSE EVALUATION IN FIELD CODE 7, USE VALUES: 4 for AS, 3 for A, 2 for D, 1 for DS.

1. It was a very worthwhile course.
2. I would take another course that was taught this way.
3. The course material was present in logical content units.
4. The course material was too difficult.
5. The course content was appropriate to the aims and objectives of the course.
6. The course was quite interesting.
7. It was not clear why certain things were being taught.
8. NOT much was gained by taking this course.
9. I would have preferred another method of teaching this course.
10. Course concepts were related in a systematic manner.
11. The course material seemed worthwhile.
12. The course was quite boring.
13. I have learned basic information in this course which I will be able to relate to other situations.
14. Overall the course was quite good.
15. I learn more when other teaching methods are used.
16. For the time allotted, topic coverage was exhaustive.
17. Some things were NOT explained very well.
18. I now feel able to communicate course material to others.
19. I have become more confident in this area because of this course.
20. The course was well-organized.
21. I think that the course was taught quite well.
22. The course content was excellent.
23. Too much material was covered in this course.
24. The course was helpful in developing new skills.
25. I developed an ability to evaluate work in this field.

MARKING INSTRUCTIONS
AS - If you agree strongly with the item
A - If you agree moderately with the item
D - If you disagree moderately the item
DS - If you disagree strongly with the item

EXAMPLE 1 1 1 1 1 1 1

(4) (3) (2) (1)

Participant's Signature ___________________________ Date ___________________________
SYSTEM FORMAT FOR ALL IEEE COURSES

Transaction Code
Participant Number
Participant Name
Participant Address
Optional Address
Optional Address
City, State, Zip
Telephone Number
Home/Business h/b
Sponsor Code
Sponsor ABET Accredited
Course Sponsor
Course Coordinator/Instructor Address
Opt. Sponsor or Coord./Instr. Address
Opt. Sponsor or Coord./Instr. Address
Opt. Sponsor or Coord./Instr. Address
Sponsor or Coord./Instr. Telephone No.
Course ID Number
Home Study
Date Completed (MMYY)
Course Title
Where Held-Organization
Where Held-Room
Where Held-Street
Where Held-City, State, Zip
Non-Degree Credits
Type of Units
Classification Code
Confirmation
Payment
Evaluation
Participant Performance
Course Sequence Number
Special Letter Request (2 digits)

(See List of Transaction Codes.)

Field Code & (# ch.)
a .. (7 ch.) Note for Field Code f:
b .. (36 ch.) For Canadian Addresses,
c .. (32 ch.) last character must be ended with *
d .. (32 ch.) For all other Foreign Addresses, last character must be @
e .. (32 ch.)
f .. (32 ch.)
g .. (20 ch.)
h .. (1 ch.)
p .. (10 ch.) Note for Field Code y:
q .. (32 ch.) Must be blank for IEEE Course Registrations.
r .. (32 ch.) Note for Field Codes X,Y,Z, these lines are blank.
s .. (32 ch.) Note for Field Codes X,Y,Z, these lines are blank.
t .. (32 ch.) 1: For Home Study Courses

x .. (10 ch.) For IEEE COURSE COMPLETIONS ONLY, type 1.
y .. (4 ch.)
z .. (60 ch.)
X .. (30 ch.) Note for Field Code $:
Y .. (30 ch.) Identify Payment as appropriate. Limited to 32 chs.
Z .. (30 ch.)
1 .. (20 ch.)
3 .. (3 ch.)
4 .. (8 ch.) Note for Field Code O (zero)
5 .. (6 ch.) For IEEE COURSE REGISTRATIONS ONLY, enter proper
6 .. (1 ch.) letter no. CE:15,CE:16,
$ .. (35 ch.) CE:17,etc. If no letter
7 .. (63 ch.) i desired, enter 99.
8 .. (6 ch.)
9 .. (5 ch.)

A participant transaction with 99 in Field Code O (zero) MUST NOT be in a Production Run that includes other transactions for the same participant number.

DO NOT ENTER MORE THAN ONE SPECIAL LETTER REQUEST AT ANY ONE TIME.

FORMAT AND SPECIAL CHARACTER DETAIL:

Reference the participant name line, type a colon in place of a space.

EXAMPLE.. Mr.:James B.:Smith
EXAMPLE.. Mr.:James B.:Smith,:Jr.,PhD.
EXAMPLE.. Lt.Col.:James B.:Smith:IV

IEEE member numbers should not have any letter prefix.

EXAMPLE.. 1234567 (7 digits only)

3-01-82 - 19 -
SAMPLE

INITIAL ENTRY OF IEEE SHORT COURSE REGISTRATION ADVANCED PAYMENT/PURCHASE ORDER

!pi
a N111111
b Mr.:David Z.:Candy
c 11111 Frenchton Pl.
d
e
f Gaithersburg, MD 72087
g 202-724-0000
h b
i NO010
j
k IEEE-EAB
l Mike Allwood
m National Telecom. & Inform. Adm.

\[ ... Note for Field Code y: Must be blank for IEEE Registrations. \]

x 1061
y
z Satellite Comm. Sys.
x National Telecom. & Inform Adm.
y Room 111
z 1325 G St. NW
l Washington, DC 20005
m 3
n 4
o 5 1021
p 6
q $ CC#2109-876-129-542 $150 10-26-81
r 7
s 8
t 9 544
u 16 \[ ... Note for Field Code-'0'(zero):- If not paid or payment at the door, use 15. \]

PRECAUTION

Use all Field Codes even though the Field is blank. This will make certain that all Fields of the participant's record that should be blank are indeed blank.
SAMPLE

INITIAL ENTRY OF IEEE HOME STUDY REGISTRATION (EXCEPT TECHNICALLY WRITE!)

!pi
a 1000001
b Mr.:James F.:Allwood
c 27 Lynn St.
d
f Frederick, MD 21701
g 301-831-8888
h
p NO010
A
q IEEE-EAB
r Educational Registrar
s IEEE
t 345 E. 47th St.
u
v New York, NY 10017
w 212-644-7860
x HS9013
y 2 Yes
z Heathkit ETS3200 Digital Techniques

...Note for Field Codes q,r,s,t,u,v:
- For the Technically Write!
Home Study Course, the
assigned Instructor's
Address and Telephone No.
(if available) are entered
on these lines.

...Note for Field Code y: Must be
blank for IEEE Registrations.

PRECAUTION
Use all Field Codes even though the
Field is blank. This will make certain
that all Fields of the participant's
record that should be blank are in-
deed blank.
SAMPLES

COMPLETION ENTRY OF IEEE SHORT COURSE

NOTE: An !pi transaction code MUST be used for a course completion when the participant is NOT presently in the Data Base. DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center. WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. THEN transmit the !cc completion entry transaction for the participant.

!cc
a NO40412
p NO010
x 1061
y 1181
3 018
4 CEAU
6 i
7 4432332123314322233333233
9 544

... Note for Field Code y:
- Completion date is written MMYY.

... Note for Field Code 3:
- Credits are written as three characters. DO NOT USE A DECIMAL POINT i.e., 4.0 is entered as 040.

COMPLETION ENTRY OF IEEE HOME STUDY COURSE

... SEE NOTES ABOVE

!cc
a 5372321
p NO010
x HS9013
y 0681
3 040
4 CEAU
6 i
7 4432332123314322233333233

3-01-82
- 22 -
EXAMPLES OF IEEE SYSTEM OUTPUTS
17 December 1981

Mr. Carl T. Reich
Grand River Dam Authority
Drawer G
Vinita, OK 74301

Dear Mr. Reich:

Thank you for your registration in the following course:

Sponsor Name: IEEE-E.A.B.
Course Number: 1052
Course Name: Oper. Amplifier Theory & Appli.

This confirmation letter and YOUR PAYMENT AT THE DOOR will be used for your admittance to the class room.

Location - Rancho Seco Nuclear Power Plan
Conference Room #205
6201 "S" Street
Sacramento, CA

Should you have any further questions, please contact the coordinator/instructor:

Course Coordinator/Instructor: Educational Registrar
Address: IEEE - EAB
21st Floor, Suite #2132
345 E. 47th Street
New York, NY 10017

Thank you for your interest in IEEE's quality education programs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

3-01-82
17 December 1981

Mr. John R. Garo
60B Canter Ave.
Bremerton, WA 98310

Dear Mr. Garo:

Your Participant No. 8888888

Thank you for your registration in the following course:

Sponsor Name: IEEE-E.A.B.
Course Number: 1041
Course Name: National Electric Safety Code

This confirmation letter is a receipt for your ADVANCED PAYMENT/PURCHASE ORDER of the course registration fee and should be used for admittance to the class room.

Location - A & M University
Bldg. #4, Room 308
Monroe & Chase Streets
Dallas, Texas

Should you have any further questions, please contact the coordinator/instructor:

Course Coordinator/Instructor: Educational Registrar
Address: IEEE - EAB
21st Floor, Suite 2132
345 E. 47th Street
New York, NY 10017

Thank you for your interest in IEEE's quality education programs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

PAYMENT TRANSACTION:
cc#: 67819345-7896-01-9 $150 10-15-81

3-01-82
Your Participant No. 7777777

Dear Lt. Beau:

Thank you for your Home Study order and payment transaction for:

Course Number: E20
Course Name: Understanding Micros thru Software Design

Please be advised that when your materials are shipped, delivery will be made by United Parcel Service (U.P.S.). In the event that course materials cannot be delivered by U.P.S., delivery will be made by Parcel Post.

In addition, IEEE's suppliers will honor a 90-day warranty period beginning with IEEE's placement of your order. Should warranty service be required, please contact the IEEE supplier direct and present this letter.

IEEE will enter your course participation in a computer-based, record-keeping system that validates the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this program.

When you have finished the course, COMPLETE AND RETURN the enclosed form to the New York address given below. All questions should be directed to the New York address and telephone number.

Thank you for your interest in IEEE quality education programs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

Payment Transaction:
ck#1438 $150 10-26-81

3-01-82
17 December 1981

Mr. Stephen R. Lee
2631 Pleasant Street
Oakland, CA 94602

Dear Mr. Lee:

Thank you for your Home Study order and payment transaction for:

   Course Number: HS9001
   Course Name: Technically Write!

Your course materials are being shipped under separate cover. When you have received your course materials and have checked the contents to be certain all the required items are included, be sure to return the ACKNOWLEDGEMENT OF RECEIPT OF MATERIALS POSTCARD which is enclosed in the course binder. You will be assigned an instructor only when IEEE has received this card at the New York address given below.

IEEE will enter your course participation in a computer-based, record-keeping system that validates the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this program.

When you have finished the course, COMPLETE AND RETURN the enclosed form to the New York address given below. All questions should be directed to the New York address and telephone number.

Thank you for your cooperation.

Very truly yours,

John F. Wilhelm
Director, Educational Services

Payment Transaction:
P001114 $150 10-26-81

3-01-82
17 December 1981

Mr. Wai-Ki Yip
1319 Pawtucket Blvd, Apt 34
Lowell, MA 01854

Dear Mr. Yip:

You have now received all the materials necessary for:

Course Number: HS9001
Course Name: Technically Write!

We have selected as your INSTRUCTOR:
Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

As we feel that you will benefit from your association with your assigned instructor, a brief biography is enclosed for your reference.

The date of this letter has been entered on your files as your OFFICIAL START DATE. You have 3-1/2 months from this date to complete the course. If for some reason you cannot maintain this time schedule, please notify your course instructor. Please retain this letter for your records.

Should you encounter any problems or find that you have questions regarding course procedures, please contact IEEE at the New York address given below. Thank you for enrolling in "Technically Write!" and I hope that the course proves beneficial to your needs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

cc: Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Encl.
3-01-82
17 December 1981

Mr. David Ian Orenstein
102-55 67th Drive
Moscow, RUSSIA K35 L08

Your Participant No. 7470594

Dear Mr. Orenstein:

You have now received all the materials necessary for:

Course Number: HS9001
Course Name: Technically Write!

We have selected as your instructor:
Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

As we feel that you will benefit from your association with your assigned instructor, a brief biography is enclosed for your reference.

The date of this letter has been entered on your files as your OFFICIAL START DATE. You have 12 months from this date to complete the course. Due to the possibility of mail delays or conditions beyond your control, you may extend the course duration an additional 6 months (18 months total). However, you MUST notify your instructor of your intention so that your projected assignment schedule can be realigned. Please retain this letter for your records.

Should you encounter any problems or find that you have questions regarding course procedures, please contact IEEE at the New York address given below. Thank you for enrolling in "Technically Write!" and I hope that the course proves beneficial to your needs.

Very truly, yours,

John F. Wilhelm
Staff Director, Educational Services

cc: Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Encl.

( Pg. 29)
17 December 1981

Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Your Participant No. 7470594

SUBJECT: INSTRUCTOR PACKET

Dear Instructor:

Enclosed are the materials comprising your Instructor Packet for:

Course Number: HS9001
Course Name: Technically Write!

A check list is included so that you can be sure all proper materials have been received. In addition to the complete "Technically Write!" course, your Instructor's Packet should include the following:

- 2 Summary of Writing Capability sheets.
- 2 Record of Assignment sheets.
- 25 Sheets of white bond paper.
- 25 White envelopes.
- 6 Manilla envelopes.
- 1 Set "Technically Write!" answer sheets.
- 1 Expense form.

Your new student's name and complete address can be found below. Please inform IEEE at the New York address given below if any item has not been enclosed.

If you find, as an instructor, that you require any materials not included in our current packet, please let IEEE know as we may be able to revise future Instructor's Packets. Thank you for your cooperation.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Student: Mr. David Ian Orenstein
102-55 67th Drive
Moscow, RUSSIA K35 L08

Encl.
3-01-82
17 December 1981

Mr. Richard S. Davis
737 Butternut Street, NW
Washington, DC 20012

Your Participant No. 6852842

Dear Mr. Davis:

This is to acknowledge receipt of a report of your having completed the following course:

- **Sponsor Name:** IEEE-E.A.B.
- **Course Number:** E20
- **Course Name:** Understanding Microprocessors Thru Software Design
- **Completion Date:** 04-79
- **Non-Degree Credits:** 6.0 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Our records indicate that this is your first course earning Continuing Education Achievement Units (CEAUs), so we are also enclosing your first Certificate of Achievement. When you have earned eight labels needed to fill this Certificate, we will automatically send you another Certificate. Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly, yours,

John F. Wilhelm
Director, Educational Services

3-01-82

( Pg. 31)
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Completion Non-Degree Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E20</td>
<td>Understanding Microprocessors Thru S 04-79</td>
<td>6.0 CEAU</td>
<td></td>
</tr>
</tbody>
</table>

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 6.0 CEAU

CE: 09

3-01-82
CERTIFICATE OF EDUCATIONAL ACHIEVEMENT

This certificate is presented to

RICHARD S. DAVIS

for successfully completing the courses sponsored by the IEEE Educational Activities Board
The program you have completed is just one of the many top-quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth the programs include "live" and video-tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

Please place your address label here

[Checkbox] I am interested in scheduling IEEE Short courses for my:
- [ ] IEEE Section
- [ ] Company
- [ ] University

Please send me information regarding your:
- [ ] Home study programs
- [ ] Video-tape programs

Fold and detach along dotted line — return top portion

This is your personal CEUA record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you've successfully completed.

We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement.

The self-stick label has been designed so that the right portion of the label (from mid-point to right edge) will be on the front of the Certificate. Bend the remainder of the label around the left edge onto the back of your Certificate.

A new Certificate will be issued when:
1. you complete your first IEEE Continuing Education Program after January 1, 1979.
2. you have affixed 8 labels to a Certificate and qualify for an additional award.

(Course Credit Award Label - Please Affix on your Certificate)

Please see other side
17 December 1981

Mr. Michael E. Thuot
Los Alamos Scientific Lab
Group 2-10, Mail Stop 764
P.O. Box 1663
Los Alamos, NM 87545

Dear Mr. Thuot:

This is to acknowledge receipt of a report of your having completed the following course:

- **Sponsor Name:** IEEE-E.A.B.
- **Course Number:** 1027
- **Course Name:** Practical Application Sym. Comp.
- **Completion Date:** 08-81
- **Non-Degree Credits:** 1.2 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.
**Participant:**
Mr. Michael E. Thuot  
Los Alamos Scientific Lab  
Group 2-10, Mail Stop 764  
P.O. Box 1663  
Los Alamos, NM 87545

**Transcript Date:** 17 December 1981

**Participant Number:** 6853394

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1018</td>
<td>Control of Electromagnetic Interference</td>
<td>IEEE-E.A.B.</td>
<td>09-79</td>
<td>1.2 CEAU</td>
</tr>
<tr>
<td>1027</td>
<td>Practical Application Sym. Comp.</td>
<td>IEEE-E.A.B.</td>
<td>08-81</td>
<td>1.2 CEAU</td>
</tr>
</tbody>
</table>

Transcript prepared under the supervision of:
John F. Wilhelm,  
Staff Director,  
Educational Services

Totals by Type:
2.4 CEAU

CE: 09

3-01-82
The program you have completed is just one of the many top-quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth the programs include “live” and video-tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

So that we may continue to serve your education needs, please complete the above card and return it to us today. No stamp is required. For identification, we ask that you remove your address label below and affix it on the card above in the space provided.

Please send me information regarding your:

☐ Home study programs
☐ Video-tape programs

☐ I am interested in scheduling IEEE Short courses for my:

☐ IEEE Section  ☐ Company,  ☐ University.

This is your personal CEUA record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you’ve successfully completed.

We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement.

The self-stick label has been designed so that the right portion of the label (from mid-point to right edge) will be on the front of the Certificate. Bend the remainder of the label around the left edge onto the back of your Certificate.

A new Certificate will be issued when:
1- you complete your first IEEE Continuing Education Program after January 1, 1979.
2- you have affixed 8 labels to a Certificate and qualify for an additional award.

(Course Credit - Award Label - Please Affix on Your Certificate)
17 December 1981

Mr. Peter Greene
5-B Pine Cove
Mt. Laurel, NJ  08054

Dear Mr. Greene:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:  IEEE-E.A.B.
Course Number:  1096
Course Name:  Digital Signal Processing
Completion Date:  10-80
Non-Degree Credits:  1.0 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Our records show that your current Certificate is already filled with Labels. Accordingly we are enclosing a new Certificate.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:03
**TRANSCRIPT OF CONTINUING EDUCATION COURSES**

**FOR THE PERIOD BEGINNING 1 January 1979**

Participant: Mr. Peter Greene  
5-B Pine Cove  
Mt. Laurel, NJ 08054

Transcript Date: 17 December 1981

Participant Number: 6884035

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Date</th>
<th>Non-Degree Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS9013</td>
<td>Digital Techniques ETS3200</td>
<td>IEEE-E.A.B.</td>
<td>01-80</td>
<td>4.0 CEAU</td>
</tr>
<tr>
<td>E-09</td>
<td>Managing a Professional Practice (Consulting Bus.)</td>
<td>IEEE-E.A.B.</td>
<td>02-80</td>
<td>2.5 CEAU</td>
</tr>
<tr>
<td>1005</td>
<td>Microprocessor - 1 Day</td>
<td>IEEE-E.A.B.</td>
<td>03-80</td>
<td>0.6 CEAU</td>
</tr>
<tr>
<td>1001</td>
<td>CAMAC</td>
<td>IEEE-E.A.B.</td>
<td>04-80</td>
<td>1.2 CEAU</td>
</tr>
<tr>
<td>1006</td>
<td>Microprocessor Sem - 2 Days</td>
<td>IEEE-E.A.B.</td>
<td>05-80</td>
<td>1.2 CEAU</td>
</tr>
<tr>
<td>1205</td>
<td>Fundamentals of Systems Grounding and Protection</td>
<td>IEEE-E.A.B.</td>
<td>06-80</td>
<td>1.8 CEAU</td>
</tr>
<tr>
<td>1039</td>
<td>Basic Project Management</td>
<td>IEEE-E.A.B.</td>
<td>08-80</td>
<td>1.2 CEAU</td>
</tr>
<tr>
<td>1151</td>
<td>Microprocessor Programming Workshop</td>
<td>IEEE-E.A.B.</td>
<td>09-80</td>
<td>3.0 CEAU</td>
</tr>
<tr>
<td>1096</td>
<td>Digital Signal Processing</td>
<td>IEEE-E.A.B.</td>
<td>10-80</td>
<td>1.0 CEAU</td>
</tr>
</tbody>
</table>

Transcript prepared under the supervision of John F. Wilhelm, Staff Director, Educational Services

Totals by Type: 16.5 CEAU

CE:09
CERTIFICATE OF EDUCATIONAL ACHIEVEMENT

This certificate is presented to

PETER GREENE

for successfully completing the courses
sponsored by the IEEE Educational Activities Board

VICE PRESIDENT, EDUCATIONAL ACTIVITIES

CHAIRPERSON, IEEE CONTINUING EDUCATION COMMITTEE

STAFF DIRECTOR, IEEE EDUCATIONAL SERVICES
The program you have completed is just one of the many top quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth, the programs include “live” and video tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

PLEASE PLACE YOUR ADDRESS LABEL HERE

Mr. Peter Greene
5-B Pine Cove
Mt. Laurel, NJ 08054

I am interested in scheduling IEEE Short courses for my:

- □ IEEE Section
- □ Company
- □ University

Please send me information regarding your:

- □ Home study programs
- □ Video-tape programs

This is your personal CEAU record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you’ve successfully completed. We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement. The self stick label has been designed so that the right portion of the label (from mid-point to right edge) will be on the front of the Certificate. Bend the remainder of the label around the left edge onto the back of your Certificate. A new Certificate will be issued when:

1. you complete your first IEEE Continuing Education Program after January 1, 1979.
2. you have affixed 8 labels to a Certificate and qualify for an additional award.

Peter Greene
6884035
1096
10–80

(COURSE CREDIT - AWARD LABEL - PLEASE AFFIX ON YOUR CERTIFICATE)

PLEASE SEE OTHER SIDE
17 December 1981

Mr. Thomas J. Waters
10313 S.W. Trapper Terr.
Beaverton, OR 97005

Your Participant No. 6975403

Dear Mr. Waters:

This is to acknowledge receipt of a report of your having completed the following course:

<table>
<thead>
<tr>
<th>Sponsor Name:</th>
<th>IEEE-E.A.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number:</td>
<td>1026</td>
</tr>
<tr>
<td>Course Name:</td>
<td>PROT. &amp; GRNDG. DIST SYSTEMS</td>
</tr>
<tr>
<td>Completion Date:</td>
<td>03-81</td>
</tr>
</tbody>
</table>

In recognition of this achievement, we are enclosing a Certificate of Merit.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.
TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant: Mr. Thomas J. Waters
10313 S.W. Trapper Terr.
Beaverton, OR 97005

Transcript Date: 17 December 1981
Participant Number: 6975403

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1026</td>
<td>PROT. &amp; GRNDG. DIST SYSTEMS</td>
<td>IEEE-E.A.B.</td>
<td>03-81</td>
<td></td>
</tr>
</tbody>
</table>

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type:
CE: 09
CERTIFICATE OF MERIT

This certificate is presented to

THOMAS J. WATERS

for completing a course in

PROTECTION AND GROUNDING OF DISTRIBUTION SYSTEMS
17 December 1981

Mr. Stephen L. Carmichael
8840 Nimbus Way
Orangevale, CA 95662

Your Participant No. 7406432

Dear Mr. Carmichael:

Enclosed is a Transcript of your Continuing Education Achievements that has been recorded in the IEEE Validation of the Continuing Education Achievement of Engineers Registry for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number on future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Director, Educational Services

Encls.
TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Stephen L. Carmichael
8840 Nimbus Way
Orangevale, CA 95662

Transcript Date: 17 December 1981
Participant Number: 7406432

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Non-Degree Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006</td>
<td>Microprocessor Seminar</td>
<td>IEEE-E.A.B.</td>
<td>09-80</td>
<td>0.0</td>
</tr>
<tr>
<td>1007</td>
<td>Microprocessor Programming Workshop</td>
<td>IEEE-E.A.B.</td>
<td>10-80</td>
<td>3.0 CEAU</td>
</tr>
<tr>
<td>1011</td>
<td>Linear Integrated Circuit Appli</td>
<td>IEEE-E.A.B.</td>
<td>10-80</td>
<td>3.0 CEAU</td>
</tr>
<tr>
<td>1052</td>
<td>Oper Amplifier Theory &amp; Appli</td>
<td>IEEE-E.A.B.</td>
<td>10-80</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Totals by Type: 6.0 CEAU

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

3-01-82
17 December 1981

Mr. Giannino B. Alberti, PE
1401 Golfview Drive
Daytona Beach, FL 32014

Dear Mr. Alberti:

Your Participant No. 6820500

This is to acknowledge receipt of your intention to participate in the IEEE project for Validation of the Continuing Education Achievement of Engineers.

Enclosed is a sample transcript. We will send you an updated copy of your transcript in acknowledgement of each course that you report to us. The transcript will show your continuing education record for the period beginning 1 January 1979.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

We hope you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.
TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant: Mr. Giannino B. Alberti, PE
1401 Golfview Drive
Daytona Beach, FL 32014

Participant Number: 6820500

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM16</td>
<td>The Art of Photocomposition Systems</td>
<td>GIA, Washington, DC</td>
<td>01-80</td>
<td>1.8 CEU</td>
</tr>
<tr>
<td>CIS030</td>
<td><strong>User-Friendly Systems</strong></td>
<td>University of Pennsylvania, Phila.</td>
<td>01-80</td>
<td>3.0 CEAU</td>
</tr>
</tbody>
</table>

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED**

 Totals by Type: 3.0 CEAU
                1.8 CEU

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services
CPT DISK FORMAT

Transmissions should be recorded on CPT disk using the System record format and characters for the information to be transmitted. The Computer is programmed not to accept certain characters in the transmission information-identification.

1. Do not use the dash or space in the absence of a number, letter, etc.

2. Be sure to use the number "0" and not the capital "0" in your transmission sequence.

3. 0000(zeros) in Field Code y will remove participant from a Non-Completed Course list without having completed the course.

CANADIAN, FOREIGN OR MISSING DOMESTIC ADDRESSES

The last character of the last line (Field Code f) of any foreign or missing domestic address must be concluded with the characters * or @ as shown in the following examples. This suppresses the missing zip code warning message on the error listing Internal Format Field Code 05.

For example:

Foreign Address: Mr. Graham J. Bell
              (Canada only) 2-1183 Ambrose Avenue
                              Prince Rupert, B.C.
                              Canada V8J 2C5*

Foreign Address: Mr. Ahmad M. Abdelmoety
              (Canada NOT included) P.O. Box 6372 Riyadh
                              Saudi Arabia @

Domestic Address: Mr. James B. Smith
                   1234 Main Street
                   New York, NY*

No Address: Mr. James B. Smith
             * (Must be entered in Field Code f.)

LOGON PASSWORD

Contact IEEE Educational Services, New York, N.Y., or Piscataway, N.J., for the appropriate LOGON PASSWORD.
TO PLAY BACK ALL THE INFORMATION IMMEDIATELY AFTER A CPT DATA TRANSMISSION type _L_ and key carriage return... HOWEVER, before asking the Computer to play back you must set a line limit = Code "OUT" and note status line; type in number 66, or the number of lines that are on the page to be played back and key carriage return. This will eliminate the CPT screen from becoming full and locking up.* Press "OUT" key, back space once and type the number _0_. This will remove the system from Station _1_. Type label _test_ and key carriage return. Type _L_ and key carriage return.

The Computer will respond and display the entire transmitted data set information.

When the test (or playback) is completed, Key Code "OUT" again and change line limit to _0_. Key carriage return. (VERY IMPORTANT - THIS OPERATION RETURNS THE SYSTEM BACK TO STATION _1_.)

At the end of the QED transmission, key carriage return and type...save . The Computer will display on the CPT screen...SAVED .

Then type... _end save_. The Computer will display on the CPT screen...

SAVED
READY

TO PRINTOFF THE INFORMATION THAT HAS BEEN TRANSMITTED type PRINTOFF and assigned text sequence (SYSB.Nkk.text - if PISCATAWAY, or SYSY.Nkk.text if NEW YORK) and key carriage return. The Computer will display an acknowledgement line on the CPT screen "DATA SET SYSB.Nkk COMPLETED" or "DATA SET SYSY.Nkk COMPLETED" and will print the contents of the transmitted data set at the Data Processing Center. This completes the PRINTOFF transaction. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on the CPT screen... READY

Type...
LOGOFF and key carriage return to get off the Computer.

TESTING FOR TRANSMISSION INTERFERENCE

There may develop spurious transmissions of Data Set information when standard (non-data) telephone lines are used for communication to the Computer Center.

To test for transmission line interference, immediately play back all the information that was a part of the suspect Data Set. If an error exists in the play-back information, cancel the Data Set, Logoff and contact Context, Inc., 215-386-7100 (F.Zigman or P.Bagley).

*(A continuous display of information on the last CPT screen line.)
TO PLAY BACK ALL THE INFORMATION FROM A SPECIFIC PREVIOUS TRANSMISSION

Begin in the same manner as for transmitting a new Data Set as follows:

Program CPT.

Call 212-683-6325 on the Modem Phone.

Type... TRETSo and key carriage return.

...after the Welcome signal, 
Type...
LOGON E776/PASSWORD ACCT(*FKNY) (*CYNJ) or (*MPB1) and key carriage return.
Type...
QED (type in this space the Text or Data Set desired, omitting the words ...
...New Line(80), i.e., QED SYSY.Nkk.Text) and BEFORE key carriage return, 
you must set a line limit = Code "OUT" and note status line; type
number 66, or the number of lines that are on the page to be played back
and key carriage return. This will eliminate the CPT screen from becoming
full and locking up.* Press "OUT" key, back space once and type the
number 0. This will remove the system from Station 1. Type label test and key
carriage return. Type L and key carriage return.

To display a particular line or lines, type L or the word List(space)
give the line number or numbers as per the following example:

L 00010 99999 (or actual line numbers)

Note: The lines are listed by 10's .. type on CPT the range of lines desired
always adding more lines than the lines that had been transmitted and key
carriage return.

The Computer will respond and display the entire previously transmitted
data set information.

When the test (or playback) is completed, Key Code "OUT" again and change
line limit to 0. Key carriage return. (VERY IMPORTANT - THIS OPERATION
RETURNS THE SYSTEM BACK TO STATION 1.)

At the end of the QED transmission, key carriage return and type...save .
The Computer will display on the CPT screen...SAVED .

Then type... end save. The Computer will display on the CPT screen ..

SAVED READY .

Type... LOGOFF and key carriage return to get off the Computer.

A specific previous transmission can be played back at any time prior to the
execution of a command for an IEEE production run that included the specific
transmission. Forty-eight (48) hours after the execution of an IEEE production
run, all transmissions used in that production run go into the Data Base
Archival System and are NOT AVAILABLE as a CPT display.
TO PLAY BACK THE DATA SET IDENTIFICATION FOR ALL TRANSMISSIONS THAT HAVE BEEN ENTERED INTO THE SYSTEM DATA BASE FROM A SPECIFIC IEEE EDUCATIONAL SERVICES LOCATION (NEW YORK, N.Y., OR PISCATAWAY, N.J.).

Begin in the same manner as for transmitting a new Data Set as follows:

Program CPT.

Call 212-683-6325 on the Modem Phone.

Type... TRET50 and key carriage return.
...after the Welcome signal,
Type...
LOGON E776/PASSWORD ACCT(*FKNY) (*CYNJ) or (*MPB1) and key carriage return.
The Computer will respond....READY

Before playback, you must set a line limit = Code "OUT" and note status line; type in number 66, or the number of lines that are on the page to be played back and key carriage return. This will eliminate the CPT screen from becoming full and locking up.* Press "OUT" key, back space once and type the number 0. This will remove the system from Station 1. Type label test and key carriage return.

Type...LISTC(space)L(E776.SYSY) and key carriage return (from NEW YORK)
LISTC(space)L(E776.SYSB) and key carriage return (from PISCATAWAY)

The Computer will take a few minutes to respond.

This transaction will list the Data Set Identification for all transmissions that have been entered into the System Data Base from a specific IEEE Educational Services location. (THIS IS ONLY THE DATA SET IDENTIFICATION. THE INFORMATION THAT IS PART OF A DATA SET IS LIMITED TO BEING AVAILABLE ONLY FOR THE 48 HOURS AFTER THE EXECUTION OF AN IEEE PRODUCTION RUN THAT INCLUDED THE DATA SET INFORMATION.)

When the test (or playback) is completed, Key Code "OUT" again and change line limit to 0. Key carriage return. (VERY IMPORTANT - THIS OPERATION RETURNS THE SYSTEM BACK TO STATION 1.)

At the end of the QED transmission, key carriage return and type...save. The Computer will display on the CPT screen...SAVED.

Then type... end save. The Computer will display on the CPT screen...

SAVED
READY

Type... LOGOFF and key carriage return to get off the Computer.

All the Identified Data Sets that have been previously transmitted from a specific IEEE Educational Services location can be played back at any time prior to the execution of a command for an IEEE production run that included transmissions from the specific IEEE Educational Services location. Forty-eight (48) hours after the execution of an IEEE production run all transmissions used in that production run go into the Data Base Archival System and are NOT AVAILABLE as a CPT display.
CANCELLATION OF A TRANSMISSION

At the end of QED transmission, type... END (instead of SAVE) and key carriage return.

The Computer response will be... Nothing Saved
Enter End or Save

Type... END again and key carriage return.

The Computer response will be... READY

Type... LOGOFF and key carriage return.

(This will void the transmission just completed.)

TO DELETE A PARTICIPANT'S NON-MEMBER OR INCORRECT IEEE MEMBER NUMBER OR TWO PARTICIPANT NUMBERS FOR THE SAME PARTICIPANT RECORD

If a participant is in the Validation & Registry System with both an IEEE member number and a non-member number, or an incorrect number, a deletion transaction !pd of the incorrect or unwanted number must be exercised. Any course attendances that had been listed under the participant's incorrect number must be transferred to the participant's correct IEEE or non-member number, that will be in the Validation & Registry System Data Base. An !pi or !pc transaction with 99 in Field Code 0 (zero) should be used.

CAUTION - When transferring each course attendance to the participant's correct member or non-member number file, CHECK FOR ACCURACY THE:

.. Course Sponsor ID;
.. Course ID; Course Sequence Number, (if any).
    Make certain the IEEE course ID is the current nomenclature, i.e., old course ID: ETS3400,
    new ID: HS9012;
.. Course Title;
.. Course Short Title (if any);
.. Non-Degree Credits (if any);
.. Type of Units (if any);
.. Evaluation (if any).

CORRECTIONS TO A PARTICIPANT INFORMATION/COURSE ATTENDANCE RECORD
(ADDITIONS OR DELETIONS)

If a participant information/course attendance record must be changed, then the incorrect participant's course attendances must be deleted !ad and then re-entered as new transactions !pc that include all participant information and all course attendances.

CAUTION - The System Format !pc transaction should be used for all additions or corrections for a participant record that is already in the Data Base.

3-01-82 - 54 -
SPONSOR/COURSE NUMBER ASSIGNMENTS

For an IEEE Entity as a Sponsor:
-- Identify the IEEE Sponsor using the 4-digit IEEE GEOCODE, IEEE Groups/Society Code, or N0010 for IEEE-EAB Sponsorship.

When the sponsor is a College or University:
-- Use the IEEE College/University Code number if available or generate an "N" number; however, first check the IEEE Validation & Registry System's alphabetized and numerical listings to determine if the sponsor is already in the Data Base. If not found, then assign the next "N" number.

For all other sponsors who would have an "N" number:
-- First check the IEEE Validation & Registry System's alphabetized and numerical listings to determine if the sponsor is already in the Data Base. If not found, then assign the next "N" number.

FOR THE COURSE NUMBER OF AN IEEE ENTITY COURSE OFFERING NOT EAB:
-- If no course number has been provided, identify the course using the IEEE's Group/Society 2-digit code and a sequence number. (IEEE-EAB-Sponsored courses will have numbers assigned by the IEEE Educational Services staff.)

For the course number of an IEEE EAB-Sponsored course:
-- HOME STUDY and VIDEOTAPE COURSES use the IEEE catalog number as the course number.
-- IEEE SHORT COURSES use the IEEE-catalog number as the course number followed by a specific course sequence number.

For example.... Course #1005/376 Date Completed: 05 81 Title " "
-- WHEN PROCESSED into the IEEE Validation & Registry System Course Attendance and Participant Information files, this will appear as...... Course ID: 1005 CRS-SEQ#: 376 Title " " Completion Date: 81 05

For the course number of all other sponsors: (Non-IEEE Courses)
-- If no course number has been provided, identify the course using XX then, in caps, the first letter of each major word in the course title. For example..course title "Managing Stress and Change" will appear as..Course ID: XXMSC

CLASS - TIP CODES

All courses recorded in the IEEE Validation and Registry System will also be identified by IEEE's "Technical Interest Profile" categories. For example....HS9013
DIGITAL TECHNIQUES ETS3200 TIP Code #1621
RECORD FORMAT FOR A COURSE CREDIT AWARD LABEL TITLE

The short form of the course title is found on an Output Listing "Award Label Titles"

The Record Format is 28 characters:

Positions 1 through 10 are the course ID.
Positions 11 through 28 are for the course short title.

(NOTE: Limit 18 characters/numbers for the course short title.)

Example: Course ID# E20
Understanding Microprocessors Through Software Design should be entered as E20(7 spaces)UND MICRO S/W DES) (28 characters in length)

INSTRUCTIONS FOR ENTERING A NEW COURSE CREDIT AWARD LABEL TITLE

Begin in the same manner as for transmitting a new Data Set.

After Logon (The following is a dialog between the CPT operator and the Data Processing Center.)

At the READY on the CPT screen ..

CPT Operator type: QED(space)IEEE.LABELS (carriage return)

CPT Screen reads: Dataset not line-numbered no-num assumed

CPT Operator type: (carriage return)

CPT Screen reads: INPUT (NVIP will not prompt you with a line number.)
At this point, type the IEEE course ID code (leaving enough blanks after the ID to fill out the 10 spaces allowed for the course ID), then type the IEEE course short title (maximum 18 spaces). When adding the title is finished, proceed ..

CPT Operator type: (carriage return) This will get you out of the INPUT mode.

CPT Screen reads: QED

CPT Operator type: L (This will print out the file as it now stands.)

CPT Screen reads: (Lists the file.)

CPT Operator type: End save

CPT Screen reads: SAVED READY

CPT Operator type: LOGOFF
SPECIAL LETTER-LOGIC REQUESTS

A letter appropriate to each specific INPUT transaction is generated through programmed letter-logic when the first or each additional course attendance record is entered into the IEEE Validation & Registry System.

A LETTER IS NOT GENERATED WHEN A CHANGE OR DELETION IS MADE TO A PARTICIPANT/COURSE ATTENDANCE RECORD.

To force the generation of a specific letter and bypass the System letter-logic, when entering either an addition, change or deletion to an existing record, designate the desired letter-logic using the 2-digit letter number in the special letter request Field Code 0 (zero) of the System format.

TO DISABLE THE PROGRAMMED LETTER-LOGIC and prevent ANY letter from being generated, specify 99 in the special letter request line field 0 of the System Format.

A participant transaction with 99 in Field Code 0 (zero) MUST NOT be in a Reduction Run that includes other transactions for the same participant number.

PARTICIPANT INFORMATION RECORDED PRIOR TO 1 DECEMBER 1981 in the manual IEEE CPT Format can be used to initiate course completions without re-recording in the System Format. However, to implement the transmission of this data, A SPECIAL LOGON SEQUENCE is required as follows:

QED IEEE.Nkk.text new

PRECAUTION

DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center. WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. Then transmit the !cc completion entry transaction for the participant.

CRITERIA FOR ENTERING NON-IEEE-EAB SPONSORED COURSE ATTENDANCE AND PARTICIPANT INFORMATION INTO THE IEEE VALIDATION & REGISTRY DATA BASE

- IEEE Member or Non-Member Participant's Registration in and completion of an IEEE-EAB Sponsored Home Study, Short or Video Course will be automatically entered into the IEEE Validation & Registry Data Base.

- IEEE Member or Non-Member Participant's completion of an ABET Accredited Department Non-degree Credit Course will be entered into the IEEE Validation & Registry Data Base when the ABET Accredited Department arranges such a transaction with the Staff Director, IEEE Educational Services.

- All other requests for participation or entry into the IEEE Validation & Registry Data Base will be returned to the sender.
IEEE SUGGESTED CODE OF GOOD PRACTICE
for
CONTINUING EDUCATION NON-DEGREE CREDIT COURSE OFFERINGS

CONSIDERATIONS:

COURSES must have stated:

° Prerequisite
° Objectives/Materials Covered
° Instructor - Qualifications
  - Rules for Substitution

FEES must be clear with all options spelled out:

° What is included in the fee must be clear;
° Any extras must be stated;
° Notes/Texts/Other Materials Covered.

If there is a lab, is the fee all inclusive?

LOCATION for course must be stated and held there or equivalent -- any changes in location must be covered in proper timely notice.

COURSE SPONSOR must provide assurance of financial responsibility including insurance.

° File original acceptance of the code with ABET or equivalent.
° Change in Policy requires new signature with ABET or equivalent.
## CROSS INDEX OF FIELD AND FORMAT CODES

### PARTICIPANT RECORD

<table>
<thead>
<tr>
<th>NAME OF FIELD</th>
<th>SYSTEM FORMAT</th>
<th>INTERNAL FORMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant Number</td>
<td>a</td>
<td>Key 1</td>
</tr>
<tr>
<td>Participant Name</td>
<td>b</td>
<td>01</td>
</tr>
<tr>
<td>Participant Address</td>
<td>c</td>
<td>02</td>
</tr>
<tr>
<td>Optional Participant Address</td>
<td>d</td>
<td>03</td>
</tr>
<tr>
<td>Optional Participant Address</td>
<td>e</td>
<td>04</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>f</td>
<td>05</td>
</tr>
<tr>
<td>Participant Telephone Number</td>
<td>g</td>
<td>06</td>
</tr>
<tr>
<td>Home/Business</td>
<td>h</td>
<td>07</td>
</tr>
<tr>
<td>College/University Code</td>
<td>i</td>
<td>08</td>
</tr>
<tr>
<td>College/University</td>
<td>j</td>
<td>13</td>
</tr>
<tr>
<td>ABET Accreditation</td>
<td>k</td>
<td>09</td>
</tr>
<tr>
<td>Degree</td>
<td>l</td>
<td>10</td>
</tr>
<tr>
<td>Major</td>
<td>m</td>
<td>11</td>
</tr>
<tr>
<td>Year of Degree</td>
<td>n</td>
<td>12</td>
</tr>
</tbody>
</table>

### NOTES FOR FILE TRANSACTION REPORT

- **D** = Delete from File
- **U** = Update of File
- **V** = Verifies Completion of Non-Complete Course

3-01-82
## ATTENDANCE RECORD

### CROSS INDEX OF FIELD AND FORMAT CODES

<table>
<thead>
<tr>
<th>NAME OF FIELD</th>
<th>SYSTEM FORMAT</th>
<th>INTERNAL FORMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor Code</td>
<td>p</td>
<td>18</td>
</tr>
<tr>
<td>Sponsor ABET Accredited</td>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>Course Sponsor</td>
<td>q</td>
<td>03</td>
</tr>
<tr>
<td>Course Coordinator/Instructor</td>
<td>r</td>
<td>27</td>
</tr>
<tr>
<td>Sponsor or Coord./Instr.Address</td>
<td>s</td>
<td>28</td>
</tr>
<tr>
<td>Opt.Spons.or Coord./Instr.Addr.</td>
<td>t</td>
<td>29</td>
</tr>
<tr>
<td>Opt.Spons.or Coord./Instr.Addr.</td>
<td>u</td>
<td>30</td>
</tr>
<tr>
<td>Spons.orCoord./Instr.City,State,Zip</td>
<td>v</td>
<td>31</td>
</tr>
<tr>
<td>Spons.orCoord./Instr.Telephone No.</td>
<td>w</td>
<td>34</td>
</tr>
<tr>
<td>Course ID Number</td>
<td>x</td>
<td>Key 3</td>
</tr>
<tr>
<td>Home Study</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>Course Completion Date</td>
<td>y</td>
<td>17 and Key 2</td>
</tr>
<tr>
<td>Course Title</td>
<td>z</td>
<td>19</td>
</tr>
<tr>
<td>Where Held- Organization</td>
<td>X</td>
<td>36</td>
</tr>
<tr>
<td>Where Held- Room</td>
<td>Y</td>
<td>37</td>
</tr>
<tr>
<td>Where Held- Street</td>
<td>Z</td>
<td>38</td>
</tr>
<tr>
<td>Where Held- City, State, Zip</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Non-degree Credits</td>
<td>3</td>
<td>21</td>
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<tr>
<td>Type of Units</td>
<td>4</td>
<td>22</td>
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<tr>
<td>Classification Code</td>
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<td>17</td>
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<tr>
<td>Confirmation</td>
<td>6</td>
<td>24</td>
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<tr>
<td>Payment</td>
<td>$</td>
<td>35</td>
</tr>
<tr>
<td>Evaluation</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Participant Performance</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Course Sequence Number</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>Special Letter Request</td>
<td>0</td>
<td>33</td>
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</tbody>
</table>
### PARTICIPANT RECORD CHANGE FORMAT

<table>
<thead>
<tr>
<th>Field</th>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Code</td>
<td>!pc</td>
<td>Required</td>
</tr>
<tr>
<td>Participant Ident.</td>
<td>a</td>
<td>Required</td>
</tr>
<tr>
<td>Participant Name</td>
<td>b</td>
<td>(36 ch.)</td>
</tr>
<tr>
<td>Address-1 Codes</td>
<td>c</td>
<td>(32 ch.)</td>
</tr>
<tr>
<td>Address-2 Required</td>
<td>d</td>
<td>(32 ch.)</td>
</tr>
<tr>
<td>Address-3 Required</td>
<td>e</td>
<td>(32 ch.)</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>f</td>
<td>(32 ch.)</td>
</tr>
<tr>
<td>Telephone</td>
<td>g</td>
<td>(20 ch.)</td>
</tr>
<tr>
<td>Tel. No. Type</td>
<td>h</td>
<td>(b if business, h if home, u if unknown)</td>
</tr>
</tbody>
</table>

### ATTENDANCE RECORD CHANGE FORMAT

<table>
<thead>
<tr>
<th>Field</th>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Code</td>
<td>!pc</td>
<td>Use !cc to report a course being completed.</td>
</tr>
<tr>
<td>Participant Ident.</td>
<td>a</td>
<td>Required</td>
</tr>
<tr>
<td>Course Ident.</td>
<td>x</td>
<td>Required</td>
</tr>
<tr>
<td>Course Completion Date</td>
<td>y</td>
<td>Required</td>
</tr>
<tr>
<td>Course Sequence Number</td>
<td>9</td>
<td>Required</td>
</tr>
<tr>
<td>Sponsor ABET Accredited</td>
<td>A</td>
<td>Required</td>
</tr>
<tr>
<td>Sponsor Code</td>
<td>p</td>
<td>Required</td>
</tr>
<tr>
<td>Course Title</td>
<td>z</td>
<td>Required</td>
</tr>
<tr>
<td>Sponsor Name</td>
<td>q</td>
<td>Required</td>
</tr>
<tr>
<td>Where Held-Organization</td>
<td>X</td>
<td>Required</td>
</tr>
<tr>
<td>Where Held-Room</td>
<td>Y</td>
<td>Required</td>
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<tr>
<td>Where Held-Street</td>
<td>Z</td>
<td>Required</td>
</tr>
<tr>
<td>City Where Held</td>
<td>1</td>
<td>Required</td>
</tr>
<tr>
<td>Course Units, No.</td>
<td>3</td>
<td>Required</td>
</tr>
<tr>
<td>Course Units, Type</td>
<td>4</td>
<td>Required</td>
</tr>
<tr>
<td>Evaluation Codes</td>
<td>7</td>
<td>Required</td>
</tr>
<tr>
<td>Confirmation Source Code</td>
<td>6</td>
<td>Required</td>
</tr>
<tr>
<td>Student Performance</td>
<td>8</td>
<td>Required</td>
</tr>
<tr>
<td>Home Study Indicator</td>
<td>2</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator Name</td>
<td>r</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator Telephone</td>
<td>w</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator Organization</td>
<td>s</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator Address-1</td>
<td>t</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator Address-2</td>
<td>u</td>
<td>Required</td>
</tr>
<tr>
<td>Coordinator City,State,Zip</td>
<td>v</td>
<td>Required</td>
</tr>
<tr>
<td>Special Letter Request</td>
<td>0</td>
<td>Required</td>
</tr>
<tr>
<td>Payment</td>
<td>$</td>
<td>Required</td>
</tr>
</tbody>
</table>

3-01-82
SPONSOR RECORD INSERT/CHANGE FORMAT

Transaction Code               !sc
Sponsor Ident.                 p            REQUIRED (10 ch.)
Sponsor ABET Accredited        A
Sponsor Sort Name (Opt.)       a            REQUIRED (26 ch.)
Contact Name                   r
Sponsor Name                   q
Sponsor Address-1              t
Sponsor Address-2               u
Sponsor City, State, Zip       v
Telephone                      w
Sponsor Short Name             b            REQUIRED (40 ch.)
Evaluation Inquiry Date        c            (6 digits)

* Internal Codes

COURSE DESCR. RECORD CHANGE FORMAT

Transaction Code               !sc
Sponsor Ident.                 p            REQUIRED (10 ch.)
Course Ident.                  x            REQUIRED (10 ch.)
Course Title                   z
Course Short Title             d            (40 ch.)
Course Title Rev. Date         e            (6 digits)
Home Study Indicator           2            (1 ch.)
Classification Code            g
Evaluation Inquiry Date        f            (6 digits)
Evaluator Name                 h
Evaluation Date                i            (4 ch.)
Evaluation Rating              j            (3 digits)
Course Units, No.              k
Course Units, Type             l
Course Units Rev. Date         m            (8 ch.)

* Internal Codes

3-01-82
RECORD FORMAT FOR RE-GENERATING A SPECIFIC INPUT TRANSACTION LETTER

!pc              (transaction code)
a _ _ _ _ _     (7 ch.) (participant ident.)
x ___________   (10 ch.) (course ident.)
y _ _ _ _       (4 ch.) (course completion date - MMYY)
0 _ _ _ _      (2 digits) (special letter request - 2-digit letter number)

RECORD FORMAT FOR ALL TRANSCRIPT REQUEST TRANSACTIONS

!tr              (transaction code)
a _ _ _ _ _     (7 ch.) (participant ident.)

NOTE: MUST BE A SPECIFIC TRANSCRIPT REQUEST FROM THE PARTICIPANT. The Transcript will be sent to the participant's home or mailing address as listed in the IEEE Validation & Registry System.

PARTICIPANT RECORD DELETE FORMAT

!pd              (transaction code)
a _ _ _ _ _     (7 ch.) (participant ident.)

ATTENDANCE RECORD DELETE FORMAT

!ad              (transaction code)
a _ _ _ _ _     (7 ch.) (participant ident.)
x ___________   (10 ch.) (course ident.)
y _ _ _ _       (4 ch.) (course completion date - MMYY)

SPONSOR RECORD DELETE FORMAT

!sd              (transaction code)
p ___________   (10 ch.) (sponsor ident.)

COURSE DESCRIPTION RECORD DELETE FORMAT

!cd              (transaction code)
p ___________   (10 ch.) (sponsor ident.)
x ___________   (10 ch.) (course ident.)
RECORD FORMAT FOR CHANGE OR DELETION OF A PARTICIPANT'S FIRST ACADEMIC DEGREE INFORMATION

!pc (transaction code)

a __________ (7 ch.) (participant ID#)

i __________ (8 ch.) (college/university code)

j ___________________ (40 ch.) (name of college/university)

k __________ (3 ch.) (ABET accreditation)

l __________ (6 ch.) (degree)

m __________ (12 ch.) (major)

n ___ (YY) (2 ch.) (year of degree)

NOTE:  !pc for participant change
        !pd for participant deletion

RECORD FORMAT FOR COURSE CONFIRMATION TRANSACTIONS

!cl (transaction code) REQUIRED

a __________ (7 ch.) (participant ident.) REQUIRED

x __________ (10 ch.) (course ident.) REQUIRED

y __________ (4 digits) (course completion date - MMYY) REQUIRED

p __________ (6 ch.) (sponsor ident.) REQUIRED

A __________ (3 ch.) (sponsor ABET accredited)

8 __________ (6 ch.) (Code 8 is the participant performance.)

6 _ (1 ch.) (confirmation source code must appear in transaction):

"c"  Confirmed by sponsor/coordinator/instructor.

"i"  Confirmed by IEEE-EAB.

"a"  Confirmed by an ABET accredited department.

q __________ (32 ch.) (sponsor name) *

z __________ (10 ch.) (course title) *

3 ___ - (3 digits) (non-degree credits) *

4 _______ (8 ch.) (type of units) *

* Automatically added to Sponsor/Course File.
COMPLETE DESCRIPTION OF ALL SYSTEM MAILINGS

RESPONSE TO FIRST REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAs:
*Letter CE:01
*Award Label
Certificate of Educational Achievement
*Transcript CE:09
Participant Information Form - Blank
Validation Program Description

RESPONSE TO ADDITIONAL REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAs; NO NEW CERTIFICATE OF EDUCATIONAL ACHIEVEMENT NEEDED:
*Letter CE:02
*Award Label
Certificate of Educational Achievement
*Transcript CE:09
Participant Information Form - Blank
Validation Program Description

RESPONSE TO ADDITIONAL REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAs; NEW CERTIFICATE OF EDUCATIONAL ACHIEVEMENT NEEDED:
*Letter CE:03
*Award Label
Certificate of Educational Achievement
*Transcript CE:09
Participant Information Form - Blank
Validation Program Description

RESPONSE OF REPORT OF IEEE-EAB-SPONSORED COURSE NOT EARNING CEAs:
*Letter CE:04
Certificate of Merit
*Transcript CE:09
Participant Information Form - Blank
Validation Program Description

RESPONSE TO REPORT OF NON-IEEE COURSE WITH CREDITS, NO CERTIFICATE, NO AWARD LABEL:
*Letter CE:05
*Transcript
Participant Information Form - Blank
Validation Program Description

RESPONSE TO REPORT OF IEEE NON-EAB COURSE, NO CERTIFICATE, NO AWARD LABEL:
*Letter CE:12
*Transcript CE:09
Participant Information Form - Blank
Validation Program Description

RESPONSE TO INTENTION TO PARTICIPATE, WITHOUT REPORT OF ATTENDANCE:
*Letter CE:06
*Sample Transcript (Letter CE:13)
Participant Information Form - Blank
Validation Program Description

REQUEST TO COURSE SPONSOR/COORDINATOR FOR CONFIRMATION OF ATTENDANCE:
*Letter CE:07
Validation Program Description

SOLICITATION TO COURSE SPONSOR/COORDINATOR FOR IEEE REVIEW OF COURSE (TEMPORARILY DISCONTINUED):
*Letter CE:08
Validation Program Description

*Starred items are system-generated; remaining items are supplied by IEEE Educational Services.
DESCRIPTION OF MAILINGS (Continued)

COURSE SPONSOR SOLICITATION:
*Letter CE:10
Sponsor/Course Information Form - Blank

PARTICIPANT SOLICITATION:
*Letter E:11
Participant Information Form - Blank

ANNOUNCEMENT TO PARTICIPANTS THAT RECORDS HAVE BEEN TRANSFERRED TO THE
IEEE SYSTEM OR RESPONSE TO REQUEST FOR TRANSCRIPT:
*Letter CE:14
Participant Information Form - Blank

SHORT COURSE REGISTRATION REPLY - NOT PAID:
*Letter CE:15
Participant Information Form - Blank

SHORT COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER:
*Letter CE:16
Participant Information Form - Blank

HOME STUDY COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER
(EXCEPT HOME STUDY HS9001 TECHNICALLY WRITE!):
*Letter CE:17
Participant Information Form - Blank

HOME STUDY COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER
FOR HOME STUDY HS9001 TECHNICALLY WRITE! ONLY:
*Letter CE:18
Participant Information Form - Blank

HOME STUDY COURSE HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT -
(U.S. and CANADA):
*Letter CE:19
Participant Information Form - Blank
Instructor's Biography

HOME STUDY COURSE HS9001
TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT for FOREIGN STUDENTS ONLY -
(Canada NOT included):
*Letter CE:20
Participant Information Form - Blank
Instructor's Biography

HOME STUDY COURSE INSTRUCTOR PACKET TRANSMITTAL LETTER.
*Letter CE:21
Participant Information Form - Blank
For Domestic Address
*Letter CE:19
- or -
For Foreign Address
*Letter CE:20
Selected Instructor Material.

* Starred items are system-generated; remaining items are supplied by IEEE
Educational Services.
## COMPLETE SYSTEM FORMAT

### FIELD TITLE

- Transaction Code
- Participant Number
- Participant Name
- Participant Address
- Optional Participant Address
- Optional Participant Address
- City, State, Zip
- Participant Telephone Number
- Home/Business
- College/University Code
- College/University
- ABET Accreditation
- Degree
- Major
- Year of Degree
- Sponsor Code
- Sponsor ABET Accredited
- Course Sponsor
- Course Coordinator/Instructor
- Sponsor or Coord./Instr.Address
- Opt. Sponsor or Coord./Instr.Address
- Opt. Sponsor or Coord./Instr.Address
- Sponsor or Coord./Instr. City, State, Zip
- Sponsor or Coord./Instr. Telephone Number
- Course ID Number
- Home Study
- Course Completion Date (MMDY)
- Course Title
- Where Held- Organization
- Where Held- Room
- Where Held- Street
- Where Held- City, State, Zip
- Non-degree Credits
- Type of Units
- Classification Code
- Confirmation
- Payment
- Evaluation
- Participant Performance
- Course Sequence Number
- Special Letter Request

### FIELD CODE & (# CH)

(See list of transaction codes.)

- a . (7 ch.)
- b . (36 ch.)
- c . (32 ch.)
- d . (32 ch.)
- e . (32 ch.)
- f . (32 ch.)
- g . (20 ch.)
- h . (1 ch.)
- i . (8 ch.)
- j . (40 ch.)
- k . (3 ch.)
- l . (6 ch.)
- m . (12 ch.)
- n . (2 ch.)
- p . (10 ch.)
- A . (3 ch.)
- q . (32 ch.)
- r . (32 ch.)
- s . (32 ch.)
- t . (32 ch.)
- u . (32 ch.)
- v . (32 ch.)
- w . (23 ch.)
- x . (10 ch.)
- y . (4 ch.)
- z . (60 ch.)
- X . (30 ch.)
- Y . (30 ch.)
- Z . (30 ch.)
- 1 . (20 ch.)
- 2 . (1 ch.)
- 3 . (3 digits)
- 4 . (8 ch.)
- 5 . (6 ch.)
- 6 . (1 ch.)
- $ . (35 ch.)
- 7 . (63 di.)
- 8 . (6 ch.)
- 9 . (5 ch.)
- 0 . (2 digits)

3-01-82 - 68 -
17 December 1981

Mr. Attila Takach
405 De Soto Drive
Los Gatos, CA 95030

Your Participant No. 7434202

Dear Mr. Takach:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name: IEEE Computer Society
Course Number: XXDFSP
Course Name: Digital Filter & Signal Processing
Completion Date: 02-80

Enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.
**TRANSCRIPT OF CONTINUING EDUCATION COURSES**

**FOR THE PERIOD BEGINNING 1 January 1979**

Participant:
Mr. Attila Takach
405 De Soto Drive
Los Gatos, CA 95030

Transcript Date: 17 December 1981

Participant Number: 7434202

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Sponsor</th>
<th>Completion Date</th>
<th>Non-Degree Date</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXDFSP</td>
<td><strong>Digital Filter &amp; Signal Processing</strong></td>
<td>IEEE Computer Society</td>
<td>02-80</td>
<td>2.1 CEU</td>
<td></td>
</tr>
</tbody>
</table>

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED**

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 2.1 CEU

CE: 09

3-01-82

(Pg. 70)
Your Participant No. 6793038

Mr. David W. Roop
8310 Holt Drive
Richmond, VA 23228

Dear Mr. Roop:

This is to acknowledge receipt of a report of your having completed the following course:

- **Sponsor Name:** West End College
- **Course Number:** XXESPC
- **Course Name:** Elec. System Protection & Coord.
- **Completion Date:** 04-79
- **Non-Degree Credits:** 0.7 CEU

Enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.
TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant: Mr. David W. Roop
8310 Holt Drive
Richmond, VA 23228

Participant Number: 6793038

Transcript Date: 17 December 1981

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<td>Fund. of Systems Grounding and Prote</td>
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**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type:

1.8 CEAU
0.7 CEU

CE: 09

3-01-82
NON-IEEE TRANSACTION CONFIRMATION REQUEST

17 December 1981

University of California
Coord. of Continuing Engrg. Ed.
Lawrence Livermore National Lab.
P.O. Box L-539
Livermore, CA 94550

Dear Course Sponsor/Coordinator/Instructor:

This is to request confirmation of the following participant at the course described below:

Participant: Mr. William B. Darmitzel
5651 El Camino Del Cerro
Tucson, AZ 85705

Sponsor ABET Accred.: 1067
Course Number: 1067
Course Name: GRNDG & LIGHT PROT
Where Held: Tucson, AZ
Completion Date: 04-81
Non-Degree Credits: 1.2 CEU

Please make any necessary corrections and indicate in the space provided below the participant's performance: pass, fail, letter or numerical grade. Add your signature, date, and return this letter in the accompanying reply envelope.

Thank you for your cooperation in helping to maintain the continuing education record of this participant.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Confirms: ____________________________
Date: ____________________________

3-01-82

CE: 07
**Participant:**
Mr. William B. Darmitzel  
5651 El Camino Del Cerro  
Tucson, AZ  85705

**Transcript Date:** 17 December 1981

**Participant Number:** 6816029

**Course Number** | **Course Title** | **Sponsor** | **Completion Non-Degree Date** | **Credits**
---|---|---|---|---
1067 | **GRMDG & LIGHT PROT** | Univ. of California | 04-81 | 1.2 CEU

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED**

**Transcript prepared under the supervision of:**
John F. Wilhelm,  
Staff Director,  
Educational Services

**Totals by Type:** 1.2 CEU

3-01-82

(Pg. 74)
5 January 1982

Mr. Joseph E. Casey
P. O. Box 546
Bryn Mawr, PA 19010

Dear EE:

IEEE invites you to participate in a voluntary, computer-based, record-keeping system for Validating the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this new program.

This system will:

- **RECORD** the non-degree credits and your evaluation, via questionnaire, for each continuing education course that you have completed after January 1, 1979.

- **CONFIRM** your course completion and performance with each sponsor of a continuing education course that you have recorded be entered into the validation program.

- **ACKNOWLEDGE** each continuing education completion that has been added to your computer-based record by promptly returning to you an updated transcript of your file.

To initiate your participation or intention to enter this IEEE voluntary validation program:

- **COMPLETE** the Continuing Education Course Attendance/Participation Information Form that is enclosed with this letter. A separate form should be submitted for each course completion to be entered into the system. Additional forms are available upon request. If you intend to participate in the IEEE Validation Program, but do not have a continuing education completion to record, write **NONE** in the Course Attendance portion of the enclosed form.

- **RETURN** the completed Continuing Education Course Attendance and Participation Information Form in the enclosed self-addressed envelope.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services
Encls.
3-01-82

345 EAST 47TH STREET * NEW YORK, NEW YORK 10017 * (212) 644-7860
445 HOES LANE * PISCATAWAY, NEW JERSEY 08854 * (201) 981-0060
17 December 1981

Boeing Company
Attn.: Mr. P. J. Beasley
M/S 87-84
P.O. Box 3707
Seattle, WA 98124

Dear Course Sponsor/Coordinator/Instructor:

IEEE invites you to participate in a voluntary, computer-based; record-keeping system for Validating the Technical Continuing Education Achievement of Engineers.

The purpose of the IEEE validation program is to motivate practicing electrical/electronics engineers to pursue quality continuing education from any responsible sponsor. Enclosed is a description of this new program.

To initiate an IEEE Educational Activities Board (EAB) review of your courses, PLEASE:

- COMPLETE the enclosed questionnaire for each course to be reviewed. Courses taken as part of an awarded degree will not be considered as a part of the validation program.

- INCLUDE appropriate descriptions of course goals, activities, materials and representative tests of participant’s attainments. RETURN in the enclosed reply envelope.

When accepted, the course will be assigned Continuing Education Achievement Units (CEAUs) by IEEE's Educational Activities Board (EAB). The term CEAU is defined as ten contact hours of acceptable participation in an organized continuing education experience taken under responsible sponsorship, capable direction, qualified instruction and an examination testing the learning accomplishment.

Very truly yours,

John F. Wilhelm
Assistant Director, Educational Services

Encls.

3-01-82

(Pg. 76)
20 January 1980

Department of Electrical Engineering
Att.: Dr. Raymond K. Jones
Moore School
University of Pennsylvania
Philadelphia, PA 19104

Dear Course Sponsor /Coordinator:

This is to call your attention to the fact that an IEEE validation program participant has attended the following course sponsored by your organization.

Course Number: CS200
Course Name: Switching Circuits
Where Held: Philadelphia, PA
Completion Date: 01-12-80
Non-Degree Credits: 3.0 PDH

For attendees of this course to accumulate Continuing Education Achievement Units (CEAUs) on their IEEE Validation Program transcripts, we suggest you invite an IEEE Educational Activities Board (EAB) review of this course. The term CEAU is defined as ten contact hours of acceptable participation in an organized continuing education experience taken under responsible sponsorship, capable direction, qualified instruction and an examination testing the learning accomplishment. Enclosed is a description of this new IEEE program.

To initiate an IEEE EAB review, PLEASE:

- COMPLETE the enclosed questionnaire for each course to be reviewed. Courses taken as part of an awarded degree will not be considered as a part of the validation program.

- INCLUDE appropriate descriptions of course goals, activities, materials and representative tests of participant’s attainments. RETURN in the enclosed reply envelope.

Sincerely,

John F. Wilhelm
Staff Director,
Educational Services

Encls.
Purpose

The basic purpose of the IEEE validation program is to motivate persons practicing electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor.

Quality

The quality of each sponsor's courses is assured through two levels of evaluation: peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board, and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant's learning accomplishment must be evaluated by the course sponsor.

Recognition

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE Continuing Education Achievement Units (CEAU's). Courses not evaluated or accepted by IEEE will be recognized with the sponsor's credit units. The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the "Validation of the Education Achievement of Engineers" program.

All program participants may request transcripts of their continuing education record.

Motivation

Many practitioners need the information available in senior college elective technical courses, but they do not receive recognition for acceptable performance unless they are seeking an advanced degree.

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course.
- IEEE recognition of quality courses within the scope of the Institute's technical expertise.
- An up-to-date transcript of each participant's completed continuing education courses from any responsible sponsor using any educational media.
- An aid to Career Planning.

Participation

The IEEE Validation program is available to practitioners and responsible sponsors of technical continuing education courses.

Courses from ABET (ECPD) accredited curricula will be accepted into the program without an initial evaluation by the program without an initial evaluation by the appropriate Group or Society of the IEEE Technical Activities Board.

Additional Information

This voluntary computer-based registry for technical continuing education non-degree credits is presently available at no charge to practitioners. This new service is made possible through a two-year NSF Grant No. SED-7918989 that has been awarded to the IEEE Educational Activities Board. The purpose is to develop a model system that will validate practicing engineers' achievement in electrical and electronics continuing education courses.

Project Director
Roy H. Mattson

Project Manager
Joseph E. Casey

IEEE Staff Director
John F. Wilhelm

Plan Now:
To be a part of this program as a
- Practitioner
or
- Course Sponsor

Write To:
"Validation of the Continuing Education Achievement of Engineers"
NSF Project Grant No. SED-7918989
Post Office Box 453
Piscataway, New Jersey 08854
CONTINUING EDUCATION COURSE ATTENDANCE AND PARTICIPANT INFORMATION FORM

Please enter this Information into the "Validation of the Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

PARTICIPANT INFORMATION

IEEE MEMBER NO.  [ ] YES □ (Check one) [ ] NO □

NAME [ ] (Mr./Mrs., etc.) First Middle Initial Last [ ] (Jr., Ph.D., etc.)

ADDRESS

City State Zip Code

TELEPHONE NO. [ ] Ext. [ ] Business □ Home □ (Check one)

FIRST ACADEMIC DEGREE INFORMATION

For IEEE use only.

COLLEGE/UNIV [ ] CAMPUS

ABET ACCREDITATION (ECPD) [ ] YES □ (Check one) [ ] NO □

FIRST DEGREE [ ] MAJOR [ ] YEAR OF DEGREE [ ]

(Check one): [ ] MAJOR (Abbreviation) m [ ] YEAR OF DEGREE n

(Check one): [ ] MAJOR (Abbreviation) m [ ] YEAR OF DEGREE n

COURSE ATTENDANCE

For IEEE use only.

COURSE SPONSOR [ ] (Institution Name or IEEE entity)

Course Coordinator/Instructor [ ]

ADDRESS

City State Zip Code

TELEPHONE NO. [ ] Ext. [ ]

COURSE NUMBER [ ] DATE COMPLETED [ ] Mo. [ ] Yr.

COURSE TITLE

WHERE HELD

City (Blank If Home Study) 2 Home Study YES or NO [ ] [ ]

NON DEGREE CREDITS [ ] TYPE OF UNIT [ ]

For IEEE use only. [ ] [ ]

(CEU, HRS., CEAU, etc.) 6

PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM
COURSE EVALUATION QUESTIONNAIRE

PLEASE respond to each statement.

NOTE: WHEN ENTERING COURSE EVALUATION IN FIELD CODE 7, USE VALUES: 4 for AS, 3 for A, 2 for D, 1 for DS.

1. It was a very worthwhile course.
2. I would take another course that was taught this way.
3. The course material was present in logical content units.
4. The course material was too difficult.
5. The course content was appropriate to the aims and objectives of the course.
6. The course was quite interesting.
7. It was not clear why certain things were being taught.
8. NOT much was gained by taking this course.
9. I would have preferred another method of teaching this course.
10. Course concepts were related in a systematic manner.
11. The course material seemed worthwhile.
12. The course was quite boring.
13. I have learned basic information in this course which I will be able to relate to other situations.
14. Overall the course was quite good.
15. I learn more when other teaching methods are used.
16. For the time allotted, topic coverage was exhaustive.
17. Some things were NOT explained very well.
18. I now feel able to communicate course material to others.
19. I have become more confident in this area because of this course.
20. The course was well organized.
21. I think that the course was taught quite well.
22. The course content was excellent.
23. Too much material was covered in this course.
24. The course was helpful in developing new skills.
25. I developed an ability to evaluate work in this field.

MARKING INSTRUCTIONS
AS - If you agree strongly with the item
A - If you agree moderately with the item
D - If you disagree moderately with the item
DS - If you disagree strongly with the item

EXAMPLE ........... (4) (3) (2) (1)
AS_ A_ D_ DS_
AS_ A_ D_ DS_
AS_ A_ D_ DS_
AS_ A_ D_ DS_

The Family Educational Rights and Privacy Act of 1974, effective January 1, 1975 provides for the release of Course Attendance and Participant Performance Information only upon receipt by the course sponsor of a written consent by the individual concerned.

"I consent to the release of my Course Attendance and Performance Information to the IEEE Validation of the Continuing Education Achievement of Engineers Project."

Participant's Signature ___________________________ Date ____________

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918989
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854

- 80 -
CONTINUING EDUCATION COURSE SPONSOR INFORMATION FORM

Please enter this information into the "Validation of the Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

COURSE INFORMATION

COURSE SPONSOR ____________________________________________
(Institution Name or IEEE entity)

COURSE COORDINATOR __________________________
First Middle Initial Last

ADDRESS ____________________________________________
City State Zip Code

TELEPHONE NO. ____________________________ Ext. _____________

COURSE NUMBER ____________________________ DATE COMPLETED ________
Mo. Yr.

COURSE TITLE ____________________________

NON DEGREE CREDITS __________ TYPE OF UNIT ____________________________
(CEU, Hrs., CEAU, etc.)

COURSE GOALS ____________________________________________

COURSE ACTIVITIES ____________________________________________

COURSE MATERIALS ____________________________________________

METHOD OF EVALUATING STUDENT PERFORMANCE ____________________________________________

Signature of Sponsor's Representative ____________________________
Date ____________________________

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918989
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854
TO INITIATE AN IEEE SELECTIVE LABEL PRODUCTION RUN FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Begin in the same manner as for transmitting a new Data Set.

CPT Operator type: TRETOSO

CPT Screen reads: WELCOME TO NVIP
PLEASE SIGN ON

CPT Operator type: LOGON E776/PASSWORD NON ACCT(*PROD)

CPT Screen reads: ICH70001I E776 LAST ACCESS AT 14:19:01 on 82.077 #
E776 LOGON IN PROGRESS AT 14:20:11 ON MARCH 18, 1982 #
NO BROADCAST MESSAGES
***** IEEE CONTINUING EDUCATION REGISTRY SYSTEM *****

Note: # This is time/date of last or present Product Run.

CPT Operator type: LABELS

CPT Screen reads: ** IEEE SELECTIVE LABEL PRODUCTION **
ENTER YOUR SECURITY CODE: ..
..CPT Operator type: FEK for IEEE EDUCATIONAL SERVICES, New York, N.Y.
- or - MPB for IEEE EDUCATIONAL SERVICES, Piscataway, N.J.

** ACCESS GRANTED, CONTINUE WITH PROCESSING **

NOTE:
INCLUDE NON-MEMBER, MEMBER, OR BOTH (N, OR M, OR B)?M
INCLUDE OR EXCLUDE LABEL ON COURSE-ID (I OR X)?X
INCLUDE OR EXCLUDE FOREIGN ADDRESSES (Y OR N)?N
ENTER LOWEST 3 DIGIT ZIP-CODE PREFIX OR THE WORD 'ALL':191
ENTER UPPER 3 DIGIT ZIP-CODE PREFIX OR 'RETURN':191 .. NOTE: An example
ENTER MAIL/LABEL CODE (UP TO 10 CHAR.S.):AQ9 of a single ZIP.
ENTER 1ST COURSE ID-NUMBER TO BE SELECTED (UP TO 10 CHAR.S.):HS9012
ENTER 2ND COURSE ID-NUMBER OR ALL ERNATE 1ST COURSE ID-NUMBER TO
BE SELECTED (OR 'RETURN' IF NO 2ND OR 3RD COURSE IS DESIRED):ETS3400
ENTER 3RD COURSE ID-NUMBER OR 'RETURN': ..NOTE:'RETURN'= Carriage Return.
INCLUDE COURSE COMPLETION (Y OR N)?Y
ENTER 4-DIGIT COURSE COMPLETION DATE:8101 (YYMM)
SELECTION CRITERIA HAVE BEEN RECORDED
CONTINUE OR ABORT JOB (C OR A)?C .. NOTE: Enter A to cancel Production.
ENTER NUMBER OF COPIES OF LABELS:1
INITIAL LABEL PROCESSING HAS BEGUN
PLEASE WAIT A FEW MOMENTS
JOB SUBMITTED FOR EXECUTION
LABEL PROCESSING COMPLETE .. NOTE: For Label Count, wait one hour;
READY then call Context, Inc., 215-386-7100
(F.Zigman or P.Bagley)

CPT Operator type: LOGOFF

CPT Screen reads: E776 LOGGED OFF TSO AT 14:23:12 ON MARCH 18,1982 #
LAST STEP COMPLETION CODE WAS USER 000

This procedure will implement an "as selected" Production of Plain Cheshire Labels - 4 across from the names and addresses that have been previously recorded in the IEEE Validation & Registry System. The Data Processing Center will deliver the IEEE Selective Label Product to FEK-IEEE Educational Services, New York, N.Y., or MPB-IEEE Educational Services, Piscataway, N.J., as entered in the Security Code.

°To designate other paper types, call Context, Inc., 215-386-7100 (F.Zigman or P.Bagley) before initiating the Selective Label Product Run.

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FINAL REPORT

NSF Grant No. SED 7918989

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS

Submitted by
Dr. Roy H. Mattson
Project Director
INTRODUCTION

Funds granted by the National Science Foundation (SED 7918989) to the Institute of Electrical and Electronic Engineers (IEEE) were to be used for the purposes stated in the grant document dated September 11, 1979.

"The Institute for Electrical and Electronics Engineers (IEEE) proposes to design, develop and disseminate a model system for validating educational achievement in the area of the continuing education of engineers.

This system, which would be applicable to any continuing education system, will consist of the following steps; 1) Any institution may submit a course evaluation package to the IEEE Technical Advisory Board for review by professional engineers; 2) If accepted, the course will be assigned Continuing Education Achievement Units (CEAUs); 3) Any interested electrical engineer (EE) may inform the IEEE of his or her intent to participate in the program and be entered into a computer-based record keeping system; 4) The participating EE will then take an acceptable course and his or her learning accomplishment will be evaluated by the course instructor; 5) The results will be transmitted to the IEEE for recording; 6) The participating EE will evaluate each course, upon completion, for quality and usefulness and inform the IEEE, and 7) The IEEE will send to the participant a dated coupon upon successful course completion indicating the number of CEAUs earned.

After earning a specified number of CEAUs, the engineer will receive a Certificate of Achievement. The long range goal of the project will be to base these Certificates on the actual attainment of engineering competencies and examine the extent to which this type of a system might be compatible with the goals of various bodies currently involved with the recertification of engineers."

The program, essentially items 1 through 7, is now functioning as explained in detail below.

Item 1. This portion of the program still needs more development effort. The IEEE was willing to accept course evaluation packages from any continuing education course sponsor to determine the acceptability of the course for CEAU credit. An unexpected problem developed in that the number of requests exceeded the processing ability of the IEEE. Presently a different system is being developed which will accredit course sponsors rather than individual courses. This system should be functioning by 1983.

Items 2 through 7 are all in place and functioning well. The IEEE is still working on the development of sequences of courses appropriate to serve the critical manpower needs of the nation.
Other technical Societies, especially the American Society of Mechanical Engineers, are studying the Validation Program with the thought of using it to serve the needs of their members. The Accrediting Board for Engineering and Technology is cooperating with the IEEE in developing the course sponsor accreditation system. Thus, the Validation Program is expanding beyond the IEEE initiation effort.

The registry system now has of 5,000 participants reporting over 10,000 course participations. The results of a mail survey of participants demonstrate that they believe the Program is such a worthy project that they are willing to pay for the service. The IEEE is continuing the program with a $3 fee associated with each participation. Thus, the IEEE and the Project Director consider the program a success.

II PROGRAM MOTIVATION AND BACKGROUND

The engineering profession and its practitioners face numerous problems in the area of continuing education (C.E.). These include: 1) motivating practitioners to pursue C.E. opportunities, 2) evaluating and improving the quality of C.E. offerings, 3) providing career guidance to practitioners, 4) avoiding obsolescence via C.E. courses, 5) providing participants with records of their C.E. activities, 6) providing Iowa registered engineers with documented C.E. information so they can meet mandatory C.E. requirements needed yearly for relicensing, 7) meeting the anticipated crisis in high technology engineering manpower, and 8) bringing the technical competences of appropriate technical societies into the C.E. picture to evaluate and improve C.E. courses.

The Validation Program is an innovative and effective solution to these problems which uses existing organizations instead of establishing new ones. It has been suggested by some that a new government agency be formed to evaluate and accredit C.E. courses and course sponsors, or that a large government funded national engineering university be created to grant master's degrees for C.E. activities. However, the Institute of Electrical and Electronic Engineers (IEEE) Validation of Educational Achievement Program addressed the problems by: 1) providing practitioners with a record of their achievements and certificates for acceptable performance, 2) having peer evaluation of C.E. course offerings and then allowing the acceptable high quality courses to grant Continuing Education Achievement Units (CEAUs) to those who pass the course and its instructor administered examination, 3) identifying and developing appropriate sequences of C.E. courses to allow practitioners to move into new high demand technical areas, 4) assuring high quality and appropriate material in C.E. courses not only through peer evaluation, but also through student evaluation of the courses, 5) having a computer based registry system
operated by the technical society to record C.E. participation, 6) providing participants with their records, 7) providing a documented mechanism of access to appropriate C.E. courses for a talented person, with any type of preparation, so that he or she can develop needed skills, and 8) using the Technical Activities Board of the IEEE as a source of peer level course reviewers.

The Institute of Electrical and Electronics Engineers is a 200,000 member international technical society organized to serve the needs of its members. About 145,000 of these members are in the United States. One of the most important services of the IEEE is technical education, and an important part of technical education is continuing education.

The IEEE wants to keep its members current technically and to help them pursue planned career development. Many individual Institute members believe these goals can be partially attained through continuing education; however, IEEE members often underutilize continuing education opportunities for a number of reasons. These include: no discernable reward for their efforts; no assurance that continuing education course is current and of high quality; and no assurance that a course fits into a pattern leading to a desired career development goal.

Studies have shown that electrical engineers in practice tend to become less productive after their mid-thirties. This phenomenon has been related to technical obsolescence. Continuing education provides a possible means of retaining a high level of productivity on the part of IEEE members.

Because of these and related problems, in 1972 the Education Activities Board of the IEEE established an Ad Hoc Committee to study the situation and make recommendations concerning appropriate actions. One of their actions was the 1973 formation of the IEEE Committee on the Validation of Educational Achievement, with Dr. Mattson as chairman.

In addition to the above considerations, there are a number of national pressures and needs affecting practicing electrical engineers which may force them to pursue continuing education. For example, there are pressures from consumer groups regarding exemption clauses resulting in legislation concerning professional registration and the legal liability of practicing engineers. It appears that all electrical engineers may some day have to be registered professional engineers --- regardless of their employment --- since they may be legally responsible for their engineering designs. A validated continuing education program will be needed to verify a continuous updating of this registration.

Other professions have developed programs to motivate and reward a member's continuing education efforts. The Physician's Recognition Award is now required in some states before the state will relicense physicians.
for continued practice. The Minnesota Bar Association requires 45 hours of formal C.E. course work every three years before relicensing. The Minnesota dentists have had a statutory C.E. requirement since 1969. The legislatures of Ohio, Iowa, and California are requiring all licensed professionals to develop programs, including C.E. activities, that will provide proof of up-to-date technical competence by each practitioner before relicensing. The IEEE Validation of Educational Achievement Program may provide practicing engineers with the ability to respond to these legal requirements for practicing their profession.

Virtually all technical societies are concerned with motivating the continuing activities of their members and rewarding their efforts. The American Society of Quality Control certifies quality engineers and reliability engineers based on an examination and other requirements including C.E. efforts.

Over 10,000 members of the 40,000 member Society of Manufacturing Engineers (SME) have become certified in various areas, based on a variety of criteria including C.E. Of the engineering founder societies --- the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Chemical Engineers, the American Institute of Mining, Metallurgical and Petroleum Engineers, and Institute of Electrical and Electronics Engineers --- only the IEEE has formulated a specific program responsive to the previously mentioned needs.

THE PROGRAM

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course by a certificate and entry into the registry system.

- IEEE recognition of quality courses within the scope of the Institute's technical expertise by allowing CEAUs to be granted.

- An up-to-date transcript of each participant's completed continuing education courses from any responsible sponsor using any educational media is available from the registry.

- An aid to career planning is available via acceptable C.E. courses.

The quality of each sponsor's courses is assured through two levels of evaluation: peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board, and student evaluation upon completion of
each continuing education course. In addition, each course participant's learning accomplishment is evaluated by the course sponsor.

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE CEAUs. Courses not evaluated or accepted by IEEE will be recognized with the sponsor's credit units.

The IEEE Validation Program provides additional recognition by maintaining a permanent continuing education record for each participant in the Validation of the Education Achievement of Engineers program via the computer based registry system. As of April 30, 1981 the registry system was fully operational using an IBM 3033 CPU connected by Racal Vadic 3455 modems to an IEEE CPT 8000 word processor. The voluntary system contained 4037 participant records, of which 1626 were not IEEE members. This, of course, indicated a high level of interest by non members. The participants submitted 3863 attendances, 162 in non IEEE courses. Of these attendances 3061 were awarded CEAUs for attendance at IEEE pre-evaluated courses. Another 540 IEEE course attendances were awarded Merit Certificates. Thus, between attendances and participants, 7900 records were stored in the system at that time.

Additional analysis shows that of the 4037 participants 335 had degrees with 219 degrees from ABET accredited programs. The 3863 attendances involved 189 courses, 58 IEEE sponsored, from 80 sponsors. The 189 courses were in the 72 IEEE technical interest areas within the scope of the 25 IEEE Societies and Groups.

The registry service was initiated March 1980, and had 699 records by June 1980, 3731 by September 1980, 5071 by December 1980 and 6081 by March 1981. Now, over 5000 participants have reported over 10,000 course participations, and the number of records continues to grow.

THE REGISTRY SYSTEM

The system consists of 11 different computer generated laser printed mailing, 7 different enclosures and a variety of information flow diagrams with associated computer programs. Appendix A provides a rather complete description of the registry system. All computer programs and system information are available to anyone interested in implementing a similar system.

PROGRAM EVALUATION

In August of 1981 an evaluation questionnaire was prepared and transmitted all participants, about 4,000. The 737 valid responses gave a very clear picture of support of the program. The raw data shown below.

<table>
<thead>
<tr>
<th>Question</th>
<th>No Response/Strongly Disagree/Disagree/Agree/Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a worthy project</td>
<td>10  19  38  336  334</td>
</tr>
<tr>
<td>Prefer central registration</td>
<td>72  32  193 336  104</td>
</tr>
</tbody>
</table>
Question | No Response/Strongly Disagree/Disagree/Agree/Strongly Agree
--- | ---
Want certificate of achievement | 108 24 140 308 157
Want course credit label | 162 32 211 252 80
Want certificate of merit | 169 46 291 196 35
Want transcript of achievement | 108 14 87 313 215
Want permanent achievement registration | 67 16 52 297 305
Rewarding personal experience | 29 4 36 373 295
Expect employer recognition | 32 49 225 332 99
Should be free to society member | 70 35 177 298 157
Should be free to participants | 77 40 178 304 138
Willing to pay | 22 87 241 330 57
Fee amount should be $3. | 149 78 145 240 125
Fee amount should be $5. | 212 115 240 153 27
Fee should be less than $10. | 186 131 153 137 130

Appendix B provides additional data and analysis of the survey.

COURSE EVALUATIONS AND DISSEMINATION

Appendix C shows the Course Evaluation Questionnaire which is filled out by participants. It also includes the results of evaluating a course which is sent to the instructor and will be used to weed out poor courses.

Information about the Validation Program has been made available to IEEE members via mailings, presentations, and articles. Figure 1 entitled "IEEE Focus on Education" describes the Program. It appeared in the January 1982 issue of the Institute, a newsletter which is sent to all IEEE members.

CONCLUSIONS

The NSF grant allowed the IEEE to establish a Validation of the Continuing Education Achievement of Engineers Program. The Program has been accepted and evaluated as being useful and appropriate. Other technical societies are investigating the Program with the objective of establishing a similar program.

Additional work is needed in two areas. First, a system for accrediting course sponsors should be established. Accredited sponsors will be allowed to grant CEAUs in appropriate courses. Student evaluations will be used to check on the quality of all CEAU courses.

Second, sequences of CEAU quality courses have to be developed in specific specialty areas to serve the needs of society. The IEEE should be a leader in this endeavor. The Validation Program provides the base needed to pursue this effort.
IEEE CONTINUING EDUCATION REGISTRY:

SYSTEM DESCRIPTION

27 January 1980

Prepared for IEEE
by
Context, Inc.
P. O. Box 216
Narberth, PA 19072
INITIAL MAILING

SELECTED MEMBER TAPE

INITIAL LETTER TEXT

LETTER PRINT

FROM PRINTER

INITIAL LETTER ASSIGNED

INFO, FORM + QUESTIONNAIRE

FOLD, STUFF, METER, MAIL

MAILING HOUSE

TO ENGINEERS

INFO, FORM DISTRIBUTION

INDIVIDUAL REQUEST FOR INFO.

INSTR. INFO, FORM QUESTIONNAIRE

MANUALLY ADDRESS, FOLD, STUFF, METER, MAIL

IEEE INFO, FORM QUESTIONNAIRE

TO REQUESTER

OTHER ENCLOSES

#9 REPLY ENVELOPE
FLYER DESCRIBING PURPOSE OF VALIDATION PROJECT
Purpose: The basic purpose of the IEEE validation program is to motivate those persons practicing electrical and electronics engineering to pursue quality technical continuing education courses from any responsible sponsor.

Quality: The quality of each sponsor's courses is assured through two levels of evaluation; peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant's learning accomplishment must be evaluated by the course sponsor.

Recognition: Recognition of acceptable academic achievement of an IEEE evaluated and accepted course is given by the granting of IEEE Continuing Education Achievement Units (CEAU's). Courses not evaluated or accepted by IEEE will be recognized with the Sponsor's credit units.

The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the "Validation of the Education Achievement of Engineers" program.

Each program participant may request transcripts of their IEEE continuing education record.
TO BE COMPLETED
AFTER EVALUATION QUESTIONNAIRE IS AVAILABLE

Signature of Sponsor's Representative_____________________
Date____________________
CONTINUING EDUCATION REGISTRY

LETTER GENERATION SUBSYSTEM

PARTIC/ATT. FILE → SORT BY PARTIC. NAME, PARTIC. NO., COMPLETION DATE → SORDED PARTIC/ATT. DATA → PRINT PARTICIPANT/ATTENDANCE LIST → PARTICIPANT/ATTENDANCE LIST

PARTIN DATA
ALPHABETICALLY BY PARTIC. NAME, COURSES BY COMPLETION DATE

SPONSOR/COURSE FILE → SORT BY SPONSOR NAME, SPONSOR NO., COURSE ID → SORDED SPONSOR/COURSE DATA → PRINT SPONSOR/COURSE LIST → SPONSOR/COURSE LIST

SPONSOR DATA
ALPHABETICALLY BY SPONSOR NAME, COURSES BY COURSE ID.

CONTINUING EDUCATION REGISTRY

MAINTENANCE LIST PRINTING
1. Input Processor: formats input data, as keypunched, into standard transaction format, and dispatches the transactions to the appropriate Transaction File.

2. Participant/Attendance File Update: updates Participant/Attendance File in accordance with sorted Transaction File; prints log of all transactions, including appropriate error and warning messages; generates an Action File containing data appropriate for generating letters and transcripts.

3. Sponsor/Course File Update: updates Sponsor/Course File in accordance with sorted Transaction File; prints log of all transactions, including appropriate error and warning messages.

4. Letter Request Assembler: generates a letter request appropriate to each record in the Action File; generates an Award Label for each new course earning CEAs. Letter request is in a standard format suitable for the letter-generation sub-system.

5. Print Participant/Attendance List: print participant data and attendance data in sequence determined by preceding Sort.

6. Print Sponsor/Course List: print sponsor and course description data in sequence determined by preceding Sort.

7. Letter Assembler: inserts data given in Letter Request File into letter forms given in Letter Text File; outputs letters as records to Letter File; prints letter counts and error messages on log.

8. Letter Print: prints letters as read from Letter File; prints letter count on log.
PARTICIPANT DATA

NEW RECORD
-  CHANGE
-  DELETE REC
-  TRANSCRIPT
ONLY

Participant Ident

Participant Name

Address-1

Address-2

Address-3

City, etc.

Telephone

Tel. No. Type

Coll. code 1st deg

ECPD Accred Flag

First deg. abbr.

Major, abbr.

Year 1st degree

ATTENDANCE DATA

NEW RECORD
-  CHANGE
-  DELETE REC

Course Ident

Course completion

Sponsor Code

Course title

City Where Held

Course units, no.

Course units, type

Evaluation codes

Confirmation code

Student perf.

Initials

Date

12-23-79
PARTICIPANT/ATTENDANCE FILE DESCRIPTION

Sequential file; contains Participant Records and Attendance Records described below. Derived fields are re-derived on each update.

Participant Record Format

<table>
<thead>
<tr>
<th>Type Derived?</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8ch</td>
<td>Participant Ident</td>
</tr>
<tr>
<td>4ch</td>
<td>Course completion year and month, dummy</td>
</tr>
<tr>
<td>10ch</td>
<td>Course Ident, dummy</td>
</tr>
<tr>
<td>26ch Y</td>
<td>Name key: participant last name, first name and initial (upper case)</td>
</tr>
<tr>
<td>6ch Y</td>
<td>Date last updated, format YYMMDD</td>
</tr>
<tr>
<td>1ch Y</td>
<td>Last update type: N-new, U-update, D-deleted</td>
</tr>
<tr>
<td>36ch Y</td>
<td>Name string suitable for address (colons removed)</td>
</tr>
<tr>
<td>4cv Y</td>
<td>Prefix</td>
</tr>
<tr>
<td>20cv Y</td>
<td>First and middle</td>
</tr>
<tr>
<td>20cv Y</td>
<td>Last name</td>
</tr>
<tr>
<td>6cv Y</td>
<td>Suffix</td>
</tr>
<tr>
<td>32ch</td>
<td>Address-1</td>
</tr>
<tr>
<td>32ch</td>
<td>Address-2</td>
</tr>
<tr>
<td>32ch</td>
<td>Address-3</td>
</tr>
<tr>
<td>32ch</td>
<td>City-state-zip or City-Country</td>
</tr>
<tr>
<td>5n Y</td>
<td>Zip</td>
</tr>
<tr>
<td>20ch</td>
<td>Telephone number</td>
</tr>
<tr>
<td>1ch</td>
<td>Telephone number type code: B-business, blank otherwise</td>
</tr>
<tr>
<td>8ch</td>
<td>College code for first degree</td>
</tr>
<tr>
<td>1ch</td>
<td>ECPD accreditation flag: Y-yes, no otherwise</td>
</tr>
<tr>
<td>6ch</td>
<td>First degree, abbr.</td>
</tr>
<tr>
<td>12ch</td>
<td>Major, abbr.</td>
</tr>
<tr>
<td>2n</td>
<td>Year of first degree</td>
</tr>
<tr>
<td>10ch</td>
<td>Spare</td>
</tr>
</tbody>
</table>

338 bytes total

Attendance Record Format

<table>
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<tr>
<th>Type Derived?</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8ch</td>
<td>Participant Ident</td>
</tr>
<tr>
<td>4ch</td>
<td>Course completion year and month</td>
</tr>
<tr>
<td>10ch</td>
<td>Course Ident</td>
</tr>
<tr>
<td>26ch Y</td>
<td>Name key, copied from Participant Record</td>
</tr>
<tr>
<td>6ch Y</td>
<td>Date last updated, format YYMMDD</td>
</tr>
<tr>
<td>1ch Y</td>
<td>Last update type: N-new, U-update, D-delete</td>
</tr>
<tr>
<td>10ch</td>
<td>Sponsor code</td>
</tr>
<tr>
<td>60ch</td>
<td>Course title</td>
</tr>
<tr>
<td>6ch</td>
<td>Course completion date, format YYMMDD</td>
</tr>
<tr>
<td>20ch</td>
<td>City where held</td>
</tr>
<tr>
<td>3n</td>
<td>Course units, number in tenths</td>
</tr>
<tr>
<td>8ch</td>
<td>Course units, type</td>
</tr>
<tr>
<td>63ch</td>
<td>Evaluation codes</td>
</tr>
<tr>
<td>1ch</td>
<td>Confirmation code: Y-yes, No otherwise</td>
</tr>
<tr>
<td>6ch</td>
<td>Student performance</td>
</tr>
<tr>
<td>10ch</td>
<td>Spare</td>
</tr>
</tbody>
</table>

255 bytes total
**SPONSOR/COURSE FILE DESCRIPTION**

Sequential File; contains Sponsor Records and Course Description Records described below. Derived fields are re-derived on each update.

### Sponsor Record Format

<table>
<thead>
<tr>
<th>Type</th>
<th>Derived?</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10ch</td>
<td></td>
<td>Sponsor Ident</td>
<td></td>
</tr>
<tr>
<td>10ch</td>
<td></td>
<td>Course ident dummy</td>
<td></td>
</tr>
<tr>
<td>26ch</td>
<td></td>
<td>Name key: sponsor name</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td>Y</td>
<td>Date last updated</td>
<td></td>
</tr>
<tr>
<td>1ch</td>
<td>Y</td>
<td>Last update type: N-new, U-update, D-delete</td>
<td></td>
</tr>
<tr>
<td>32ch</td>
<td></td>
<td>Sponsor name</td>
<td></td>
</tr>
<tr>
<td>32ch</td>
<td></td>
<td>Address-1</td>
<td></td>
</tr>
<tr>
<td>32ch</td>
<td></td>
<td>Address-2</td>
<td></td>
</tr>
<tr>
<td>32ch</td>
<td></td>
<td>City-state-zip or City-country</td>
<td></td>
</tr>
<tr>
<td>5n</td>
<td>Y</td>
<td>Zip</td>
<td></td>
</tr>
<tr>
<td>20ch</td>
<td></td>
<td>Telephone number</td>
<td></td>
</tr>
<tr>
<td>30ch</td>
<td></td>
<td>Sponsor short name,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name if this field is blank</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td></td>
<td>Evaluation inquiry date</td>
<td></td>
</tr>
<tr>
<td>10ch</td>
<td></td>
<td>Spare</td>
<td></td>
</tr>
</tbody>
</table>

284 bytes total

### Course Description Record Format

<table>
<thead>
<tr>
<th>Type</th>
<th>Derived?</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td>Sponsor Ident</td>
<td></td>
</tr>
<tr>
<td>10ch</td>
<td></td>
<td>Course ident</td>
<td></td>
</tr>
<tr>
<td>26ch</td>
<td></td>
<td>Name key: sponsor name</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td>Y</td>
<td>Date last updated</td>
<td></td>
</tr>
<tr>
<td>1ch</td>
<td>Y</td>
<td>Last update type: N-new, U-update, D-delete</td>
<td></td>
</tr>
<tr>
<td>60ch</td>
<td></td>
<td>Course title</td>
<td></td>
</tr>
<tr>
<td>40ch</td>
<td></td>
<td>Course short title,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Title if this field is blank</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td></td>
<td>Course title entry or change date</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
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<td>Classification code</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td></td>
<td>Evaluation inquiry date</td>
<td></td>
</tr>
<tr>
<td>20ch</td>
<td></td>
<td>IEEE evaluator name</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
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<td>4ch</td>
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<td>IEEE evaluation rating</td>
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</tr>
<tr>
<td>3n</td>
<td></td>
<td>Course units, number in tenths</td>
<td></td>
</tr>
<tr>
<td>8ch</td>
<td></td>
<td>Course units, type</td>
<td></td>
</tr>
<tr>
<td>6ch</td>
<td></td>
<td>Course units entry or change date</td>
<td></td>
</tr>
<tr>
<td>10ch</td>
<td></td>
<td>Spare</td>
<td></td>
</tr>
</tbody>
</table>

228 bytes total
ACTION FILE DESCRIPTION

Each record of Action File causes one letter and associated enclosures to be generated. Action is determined by examination of the Control Data portion of the record, in accordance with the following rules:

If Action Flag=C, a new course has been reported in the last course record included in the Action Record. Letters to be generated depend on whether this is first CEAU course, or some multiple of eight.

If Action Flag=T and number of course records is zero, then a sample transcript is to be generated.

If Action Flag=T and number of course records is greater than zero, then just a transcript has been requested, which will list all the course records given in this Action Record.

Control Data

1ch Action Flag: C = new course reported
T = transcript only

2n Number of course records included in this Action Record

Participant Data

8ch Participant Ident Number
36ch Participant Name String suitable for address
4cv Prefix
20cv Last Name
32ch Address-1
32ch Address-2
32ch Address-3
32ch City-State-Zip or City-Country
5n Zip (in case sorting by zip is necessary)
10ch Spare

225 bytes total

Attendance Data (provision for 100 occurrences)

10ch Sponsor Code
10ch Course Ident
6ch Course completion date, format YYMMDD
60ch Course Title
3n Course units, number in tenths
8ch Course units, type
1ch Confirmation code
10ch Spare

118 bytes total
### Participant/Attendance File

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ch</td>
<td>File code &quot;P&quot;</td>
</tr>
<tr>
<td>8ch</td>
<td>Participant Ident</td>
</tr>
<tr>
<td>4ch</td>
<td>Course completion date, YYMM (blank for Participant Data)</td>
</tr>
<tr>
<td>10ch</td>
<td>Course ident (blank for Participant Data)</td>
</tr>
<tr>
<td>1ch</td>
<td>Transaction Type: N-new, U-update, D-delete, T-transcript only</td>
</tr>
<tr>
<td>2n</td>
<td>Field number</td>
</tr>
<tr>
<td>54ch</td>
<td>Field Value</td>
</tr>
</tbody>
</table>

### Sponsor/Course Description File

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ch</td>
<td>File code &quot;S&quot;</td>
</tr>
<tr>
<td>10ch</td>
<td>Sponsor Ident</td>
</tr>
<tr>
<td>10ch</td>
<td>Course Ident (blank for Sponsor Data)</td>
</tr>
<tr>
<td>1ch</td>
<td>Transaction Type: N-new, U-update, D-delete</td>
</tr>
<tr>
<td>2n</td>
<td>Field number</td>
</tr>
<tr>
<td>56ch</td>
<td>Field Value</td>
</tr>
</tbody>
</table>

12-24-79
The IEEE mail survey is a data base with 737 valid returns. Approximately two-thirds of the returns were by third-class mail. Overall, responses to the individual items run heavily to the "agree" side of the scale. (Future surveys might want to reverse some item directions to test and/or correct for response bias.) The only items where over half of the respondees are on the disagree end of the scale are the third component of the third item "Want certificate of merit" and the second and third components of the last item "Fee should be $5" and "Fee should be less than $10." The non-response rate for the survey is very good except for items #3 and #8. The multiple response mode may not have been clear to the respondents on these items.

The matrix of correlation coefficients contains a great deal of useful information about the survey data. About forty percent of the correlations (all those over 0.08) can be regarded as a fairly accurate reflection of how people similar to the respondents would respond to these or related questions. (Significance determined at .05 level). Out of the 240 possible item inter-correlations, seventeen are .30 or higher, five are in the .40's and two are in the .50's (See starred items in annotated output.) Six of the seventeen high correlations are among the various multiple responses to items #3 and #8, while three more are between these responses and other items. The one item which does not correlate significantly with any other items is "Mail-class." In fact, none of the mail-class item correlations are large enough for one to state with confidence that they are different from zero.

The cross-tabulation or two-way frequency tables compare mail-class and item #1 ("worthy project") to a selection of items, including four composite indices. The first two composite indices were derived from the multiple responses to item #3. One, "WNTAWRDS", is a sum of all the awards a person checked at the "Agree" or "Agree Strongly" levels. The second, "DSLKAWDS", is a sum of all the awards checked by a person at "Disagree" or "Strongly disagree" levels. The third (FEEOK) and fourth (DSLKFEE) indices were formed by the same process with item #8. As in the correlation matrix, mail-class shows no dependable relationship to anything. The relationship of mail-class to the two indices from item #8 is almost significant at the .05 level. If the same proportions of responses held for a larger sample, then the results would be significant. If the results had reached statistical significance, they would have indicated that third-class mailers approved fewer separate fee structures than first-class mailers.
On the other hand, for item 01, "Worthy project", six out of a possible seven relationships show up as significant. Only mail-class has a non-significant relationship to "Worthy project". Respondents who agreed to the "worthy project" item also tended to agree with the other items except for the two indices DSLKAWDS and DSLKFEE. Response consistency is maintained here as well with the relationship between "worthy project" and fewer mentions of dislikes either on the awards or fee level items.

The differences between the item means for first-class mailers as against those of third-class mailers were tested by a $T^2$ for overall significance and a series of t-tests on each item individually. Neither the overall $T^2$ nor any of the individual T-tests are statistically significant, a result consistent with the results of the correlation matrix and the cross-tabulations.

Bivariate plots originally had been planned but these were not produced due to the inappropriate distributional pattern of the data. Because of the relatively narrow range of responses by the majority of respondents on most items, higher level (polynomial) relationships among the data seem unlikely.

Possible further analyses would depend on whether or not these preliminary results generate further questions. It certainly would be possible to examine the relationship of the entire survey or some subset of it to any one item (as was done with Item 01 here). It also would be possible to take a group of items (all of which relate to some particular item) and assess which items have a more powerful effect than others. The relationship between any two items of interest can be examined, as well, to determine how much of that relationship really comes only from those two items and how much is shared with other items. It is possible also to take any two chi-square statistics or any two correlation coefficients and determine if the difference between them is significant; that is, if one relationship is dependably stronger or more important (statistically) than another.

The most productive course of action at this point would appear to be:

1) client examine preliminary analysis results and raise any unanswered questions;
2) client communicate questions of interest, if any, for further analysis;
3) DAC Associates submit proposal for design and estimated costs of requested further analysis.
### WRTHYPRJ

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## Willing To Pay

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**CORRELATION COEFFICIENTS / PROB > |R| UNDER H0: RHO=0 / NUMBER OF OBSERVATIONS**

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| WORTHYPJ       | THIS IS A WORTHY PROJECT | 0.00000000  | 0.32017981 | 0.53098672 | 0.96348211 | 0.96606949 | 0.9256589 | 0.00100001 | 0.00014000 | 0.00017000 |
| PRFCNTRG       | CRFCTACV      | 0.32017981  | 1.00000000 | 0.1799345  | 0.24146207 | 0.17282073 | 0.2223925 | 0.18022073 | 0.35528273 | 0.022677  |
| CRFCTMRT       | CRSCRDTL      | 0.53098672  | 0.1799345  | 1.00000000 | 0.00032017 | 0.00010024 | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 |
| TRANACHV       | PRMRGACV      | 0.96348211  | 0.24146207 | 0.17282073 | 1.00000000 | 0.00000001 | 0.00000001 | 0.00000001 | 0.00000001 | 0.00000001 |
| REWPEREX       | EXEMPREC      | 0.96606949  | 0.17282073 | 0.2223925  | 0.35528273 | 1.00000000 | 0.2267700  | 0.35528273 | 0.022677  |
| FREEPROC       | FREEPART      | 0.9256589   | 0.18022073 | 0.2223925  | 0.35528273 | 0.35528273 | 1.00000000 | 0.0000014 | 0.0000014 | 0.0000014 |
| PRMRGACV       | WILTOPY       | 0.00000001  | 0.00032017 | 0.00010024 | 0.0000014 | 0.0000014 | 0.0000014 | 1.00000000 | 0.24097245 | 0.03223925 |
| EXEMPREC       | FEAMT3        | 0.00000001  | 0.00010024 | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 | 0.24097245 | 1.00000000 | 0.03223925 |
| FREEPROC       | FEAMT5        | 0.00000001  | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 | 0.03223925 | 0.03223925 | 1.00000000 |
| FREEPART       | FEELT10       | 0.00000001  | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 | 0.0000014 | 0.03223925 | 0.03223925 | 0.03223925 | 1.00000000 |

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**131**
### Statistical Analysis System

**Correlation Coefficients / Prob > |R| Under H0: Rho=0 / Number of Observations**

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**Number of Observations:**
- FREEPART: 411
- FEEAMT3: 581
- FEEAMT5: 492
- FEELT10: 491
## STATISTICAL ANALYSIS SYSTEM

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### STATISTICS FOR 2-WAY TABLES

- **Chi-Square (Chi-square)**: 2.282, DF = 3, Prob = 0.5160
- **Phi**: 0.056
- **Contingency Coefficient**: 0.056
- **Cramer's V**: 0.056
- **Likelihood Ratio Chi-square**: 2.572, DF = 3, Prob = 0.4625
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**STATISTICS FOR 2-WAY TABLES**

- **CHI-SQUARE**: 1.594, DF=5, PROB=0.9019  
  Not sig.
- **PHI**: 0.054
- **CONTINGENCY COEFFICIENT**: 0.054
- **CRAMER’S V**: 0.054
- **LIKELIHOOD RATIO CHISQUARE**: 1.626, DF=5, PROB=0.8981
## Table of MailClass by DSLKawds

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### Statistics for 2-Way Tables

- CHI-Square: 1.594, DF = 5, Prob = 0.9019
- PHI: 0.054
- Contingency Coefficient: 0.054
- Cramer's V: 0.054
- Likelihood Ratio ChiSquare: 1.626, DF = 5, Prob = 0.8981

**NS.**
### Table of Mailclass by Freesocs

**Mailclass**

**Freesocs**

Should Be Free to Society Member

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**Statistics for 2-Way Tables**

- **Chi-Square**: 1.660, DF = 3, Prob = 0.6960
- **Phi**: 0.050
- **Contingency Coefficient**: 0.050
- **Cramer's V**: 0.050
- **Likelihood Ratio ChiSquare**: 1.735, DF = 3, Prob = 0.6292

* N.S.
TABLE OF MAILCLASS BY WILTTOPY

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STATISTICS FOR 2-WAY TABLES

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<td>CRAMER'S V</td>
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NS.
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### Statistics for 2-way tables

- **Chi-square**: 7.72, $\text{DF} = 3$, $\text{PROB} = 0.0522$
- **Phi**: 0.126
- **Contingency Coefficient**: 0.125
- **Cramer's V**: 0.126
- **Likelihood Ratio Chi-square**: 7.554, $\text{DF} = 3$, $\text{PROB} = 0.0562$

Close to sig.
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**Statistics for 2-Way Tables**

- **Chi-Square**: 7.721, DF = 3, PRob = 0.0522
- **Phi**: 0.126
- **Contingency Coefficient**: 0.125
- **Cramer's V**: 0.126
- **Likelihood Ratio Chi-Square**: 7.554, DF = 3, PRob = 0.0562

Close to Sig.
### Table of WorthyPrj by Wntawrs

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#### Statistics for 2-way Tables

*Warning:* Over 20% of the cells have expected counts less than 5. The table is so sparse that Chi-square may not be a valid test.

- **Chi-square (CHI-SQUARE):** 155.644, DF = 15, PROB = 0.0001
- **Phi (PHI):** 0.533
- **Contingency Coefficient:** 0.470
- **Cramer's V:** 0.308
- **Likelihood Ratio ChiSquare (LIKELIHOOD RATIO CHISQUARE):** 94.017, DF = 15, PROB = 0.0001

With the size of ChiSquare represented here, this is not a problem for this or any other "WorthyPrj" table.
## STATISTICAL ANALYSIS SYSTEM

### TABLE OF WORTHYPRJ BY DSLKAWDS

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**STATISTICS FOR 2-WAY TABLES**

**WARNING:** OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5. TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

- CHI-SQUARE: 155.644, DF = 15, PROB = 0.0001
- PHI: 0.533
- CONTINGENCY COEFFICIENT: 0.470
- CRAMER'S V: 0.308
- LIKELIHOOD RATIO CHISQUARE: 94.017, DF = 15, PROB = 0.0001

**h.s.**
### TABLE OF WRTHYPRJ BY FREESOCS

**WRTHYPRJ**  **THIS IS A WORTHY PROJECT**  **FREESOCS SHOULD BE FREE TO SOCIETY MEMBER**

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**STATISTICS FOR 2-WAY TABLES**

**WARNING:** OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.

**TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.**

<table>
<thead>
<tr>
<th>STATISTIC</th>
<th>Value</th>
<th>DF</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHI-SQUARE</td>
<td>175.649</td>
<td>9</td>
<td>0.0001</td>
</tr>
<tr>
<td>PHI</td>
<td>0.515</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINGENCY COEFFICIENT</td>
<td>0.454</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRAMER'S V</td>
<td>0.297</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIKELIHOOD RATIO CHISQUARE</td>
<td>116.484</td>
<td>9</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
### TABLE OF WRTHYPRJ BY FREEPART

**WRTHYPRJ** THIS IS A WORTHY PROJECT  FREEPART SHOULD BE FREE TO PARTICIPANTS

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>PERCENT</th>
<th>ROW PCT</th>
<th>COL PCT</th>
<th>NO RESPONSE</th>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>AGREE</th>
<th>STRONGLY AGREE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
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<td>303</td>
<td>136</td>
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</table>

**STATISTICS FOR 2-WAY TABLES**

**WARNING:** OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.

**TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.**

- **CHI-SQUARE** 60.171  DF= 9  PROB=0.0001
- **PHI** 0.322  
- **CONTINGENCY COEFFICIENT** 0.162  
- **CRAMER'S V** 0.186  
- **LIKELIHOOD RATIO CHISQUARE** 46.388  DF= 9  PROB=0.0001
### Table of WorthPyj Project by Willtopy

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Row Pct</th>
<th>Col Pct</th>
<th>Total</th>
</tr>
</thead>
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<td></td>
<td>STRONGLY DISAGREE</td>
<td>AGREE</td>
<td>STRONGLY AGREE</td>
</tr>
<tr>
<td>NO RESPONSE</td>
<td>5</td>
<td>2</td>
<td>1</td>
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<tr>
<td>STRONGLY DISAGREE</td>
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<td>1</td>
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<tr>
<td>DISAGREE</td>
<td>1</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>AGREE</td>
<td>7</td>
<td>137</td>
<td>147</td>
</tr>
<tr>
<td>STRONGLY AGREE</td>
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<td>87</td>
<td>239</td>
<td>329</td>
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**Statistics for 2-Way Tables**

- **Chi-Square**: 150.348, DF = 9, PROB = 0.0001
- **Phi**: 0.460
- **Contingency Coefficient**: 0.418
- **Cramer's V**: 0.266
- **Likelihood Ratio Chi-Square**: 120.381, DF = 9, PROB = 0.0001

**Warning**: Over 20% of the cells have expected counts less than 5. The table is so sparse that Chi-Square may not be a valid test.
### Table of Worthy Project by Feeok

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
<th>Row Pct</th>
<th>Col Pct</th>
<th>Total</th>
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</thead>
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<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Percent</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Row Pct</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Col Pct</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>No Response</strong></td>
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<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Strongly Disagree</strong></td>
<td>7</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>14</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>106</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Strongly Agree</strong></td>
<td>117</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>140</td>
<td>149</td>
<td>117</td>
<td>77</td>
<td>483</td>
</tr>
</tbody>
</table>

**Statistics for 2-Way Tables**

Warning: Over 20% of the cells have expected counts less than 5. The table is so sparse that chi-square may not be a valid test.

- **Chi-Square**: 41.139, DF = 9, Prob = 0.0001
- **Phi**: 0.292
- **Contingency Coefficient**: 0.260
- **Cramer's V**: 0.168
- **Likelihood Ratio Chi-square**: 44.626, DF = 9, Prob = 0.0001
### TABLE OF WRTHYPRJ BY DSLKFEE

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>TOTAL</th>
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<tr>
<td>NO RESPONSE</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>DISAGREE</td>
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<td>4</td>
<td>16</td>
</tr>
<tr>
<td>AGREE</td>
<td>106</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>STRONGLY AGREE</td>
<td>117</td>
<td>53</td>
<td>75</td>
<td>45</td>
<td>217</td>
</tr>
<tr>
<td>TOTAL</td>
<td>157</td>
<td>77</td>
<td>117</td>
<td>149</td>
<td>60</td>
</tr>
</tbody>
</table>

### STATISTICS FOR 2-WAY TABLES

- **Chi-Square**: 41.139, \( \text{DF} = 9, \text{Prob}=0.0001 \)
- **Phi**: 0.292
- **Contingency Coefficient**: 0.280
- **Cramer's V**: 0.168
- **Likelihood Ratio Chi-Square**: 44.626, \( \text{DF} = 9, \text{Prob}=0.0001 \)

**Warning**: Over 20% of the cells have expected counts less than 5. Table is so sparse that Chi-Square may not be a valid test.
Differences among group means using all variables for the following groups:

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0000</td>
<td>2.9497</td>
<td>2.6666</td>
</tr>
<tr>
<td>2</td>
<td>1.0000</td>
<td>2.7571</td>
<td>2.6582</td>
</tr>
</tbody>
</table>

**Overall (all items considered simultaneously):**

- Mahalanobis D Square: 0.6711
- Hotelling T Square: 8.0056
- F Value: 0.7147
- Degrees of Freedom: 11, 543
- P Value: 0.725

Warning - since special missing value formulas are used, these multivariate statistics are only approximate.

Differences on single variables:

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0000</td>
<td>2.9497</td>
<td>2.6666</td>
</tr>
<tr>
<td>2</td>
<td>1.0000</td>
<td>2.7571</td>
<td>2.6582</td>
</tr>
</tbody>
</table>

- F (Separate): 0.64 0.520 440.3
- F (Pooled): 0.63 0.530 663
- F (For Variances): 1.75 0.186 1, 663

- Levene: 0.59 0.443 1, 627

Differences among group means using all variables for the following groups:

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0000</td>
<td>2.9497</td>
<td>2.6666</td>
</tr>
<tr>
<td>2</td>
<td>1.0000</td>
<td>2.7571</td>
<td>2.6582</td>
</tr>
</tbody>
</table>

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- Hotelling T Square: 8.0056
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- Degrees of Freedom: 11, 543
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Differences on single variables:

<table>
<thead>
<tr>
<th>Variable Number</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0000</td>
<td>2.9497</td>
<td>2.6666</td>
</tr>
<tr>
<td>2</td>
<td>1.0000</td>
<td>2.7571</td>
<td>2.6582</td>
</tr>
</tbody>
</table>

- F (Separate): 0.64 0.520 440.3
- F (Pooled): 0.63 0.530 663
- F (For Variances): 1.75 0.186 1, 663

- Levene: 0.59 0.443 1, 627
DIFFERENCES ON SINGLE VARIABLES

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP 1</th>
<th>GROUP 2</th>
<th>GROUP 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRFCTMR7</td>
<td>1.0000</td>
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<td>2.3968</td>
</tr>
<tr>
<td>MEAN</td>
<td>2.4261</td>
<td>3.1680</td>
<td>2.6540</td>
</tr>
<tr>
<td>S.E.M.</td>
<td>0.0694</td>
<td>0.0380</td>
<td>0.0358</td>
</tr>
<tr>
<td>T (SEPARATE)</td>
<td>0.90</td>
<td>0.367</td>
<td>383.6</td>
</tr>
<tr>
<td>T (POOLED)</td>
<td>0.86</td>
<td>0.392</td>
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</tr>
<tr>
<td>F (FOR VARIANCES)</td>
<td>LEVENE 3.14</td>
<td>0.077</td>
<td>1, 566</td>
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<table>
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<th>GROUP 3</th>
</tr>
</thead>
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<td>2.5800</td>
</tr>
<tr>
<td>MEAN</td>
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<td>3.1461</td>
<td>2.8510</td>
</tr>
<tr>
<td>S.E.M.</td>
<td>0.0518</td>
<td>0.0358</td>
<td>0.0358</td>
</tr>
<tr>
<td>T (SEPARATE)</td>
<td>0.55</td>
<td>0.582</td>
<td>358.0</td>
</tr>
<tr>
<td>T (POOLED)</td>
<td>0.55</td>
<td>0.586</td>
<td>627</td>
</tr>
<tr>
<td>F (FOR VARIANCES)</td>
<td>LEVENE 0.01</td>
<td>0.934</td>
<td>1, 627</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP 1</th>
<th>GROUP 2</th>
<th>GROUP 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIRGACV</td>
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<td>2.6400</td>
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<td>MEAN</td>
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<td>3.3684</td>
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<td>S.E.M.</td>
<td>0.0442</td>
<td>0.0354</td>
<td>0.0354</td>
</tr>
<tr>
<td>T (SEPARATE)</td>
<td>-0.39</td>
<td>0.696</td>
<td>464.7</td>
</tr>
<tr>
<td>T (POOLED)</td>
<td>-0.37</td>
<td>0.711</td>
<td>668</td>
</tr>
<tr>
<td>F (FOR VARIANCES)</td>
<td>LEVENE 5.66</td>
<td>0.018</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
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<th>GROUP 2</th>
<th>GROUP 3</th>
</tr>
</thead>
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<td>3.3464</td>
<td>3.3564</td>
</tr>
<tr>
<td>S.E.M.</td>
<td>0.0397</td>
<td>0.0277</td>
<td>0.0277</td>
</tr>
<tr>
<td>T (SEPARATE)</td>
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<td>0.363</td>
<td>446.1</td>
</tr>
<tr>
<td>T (POOLED)</td>
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<td>0.367</td>
<td>706</td>
</tr>
<tr>
<td>F (FOR VARIANCES)</td>
<td>LEVENE 0.93</td>
<td>0.335</td>
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</tbody>
</table>
### Differences on Single Variables

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<th>GROUP 2</th>
<th>MEAN 1</th>
<th>MEAN 2</th>
<th>STD DEV 1</th>
<th>STD DEV 2</th>
<th>S.E.M. 1</th>
<th>S.E.M. 2</th>
<th>MAXIMUM 1</th>
<th>MAXIMUM 2</th>
<th>MINIMUM 1</th>
<th>MINIMUM 2</th>
<th>T-VALUE</th>
<th>SAMPLE SIZE 1</th>
<th>SAMPLE SIZE 2</th>
<th>F-TEST</th>
<th>P-VALUE</th>
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<td>0.0515</td>
<td>0.0370</td>
<td>4.0000</td>
<td>4.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.56</td>
<td>228</td>
<td>477</td>
<td>1.51</td>
<td>0.219</td>
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<td>2.6591</td>
<td>0.9037</td>
<td>0.9689</td>
<td>0.0657</td>
<td>0.0465</td>
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<td>4.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.58</td>
<td>189</td>
<td>399</td>
<td>1.59</td>
<td>0.032</td>
</tr>
<tr>
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<td>1</td>
<td>2</td>
<td>2.1472</td>
<td>2.1878</td>
<td>0.7717</td>
<td>0.8539</td>
<td>0.0604</td>
<td>0.0464</td>
<td>4.0000</td>
<td>4.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>-0.54</td>
<td>163</td>
<td>362</td>
<td>3.86</td>
<td>0.050</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>2</td>
<td>2.5402</td>
<td>2.4562</td>
<td>1.0944</td>
<td>1.0938</td>
<td>0.0630</td>
<td>0.0564</td>
<td>4.0000</td>
<td>4.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.84</td>
<td>174</td>
<td>377</td>
<td>0.00</td>
<td>0.170</td>
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</tbody>
</table>

**F-Test for Variances**

<table>
<thead>
<tr>
<th>VARIABLE NUMBER</th>
<th>GROUP 1</th>
<th>GROUP 2</th>
<th>F-VALUE</th>
<th>MIN MAX MIN MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>1.51</td>
<td>0.219 1.703</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>1.59</td>
<td>0.032 1.586</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>3.86</td>
<td>0.050 1.523</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>0.00</td>
<td>0.170 1.549</td>
</tr>
</tbody>
</table>
Appendix C

IEEE Continuing Education Registry
Course Evaluation Questionnaire Results

The tabulated results for the course evaluation questionnaire data gathered from January, 1979 through October, 1980 are presented in Table 1. The values under each response category (AS, A, D, DS) are proportions of the 95 students selecting each response. The mean was calculated on the basis of a 4, 3, 2, 1 weighting of the most positive to the least positive response. The column labeled "BEST" indicates the most positive response to each item. Thirteen of the 25 items were taken from the Arizona Course/Instructor Evaluation Questionnaire (CIEQ) which has extensive normative data. Using the normative data on the CIEQ items will help in interpreting the results on the other 12 items.

The normative data (deciles) for the 13 CIEQ items and the two subscales that could be formed from eight of those 13 items are presented in Table 2. The decile columns labeled "U of A" and "Overall" present a comparison of this group's MEAN responses with those obtained in other courses at the University of Arizona and in the 100 colleges and universities that have used the CIEQ throughout the United States. The additional decile column in the subscale area labeled "Level" presents a comparison of this group's MEAN responses to all University of Arizona and nationwide courses at the graduate level. The deciles range from a low of 0 to a high of 9 and may be interpreted as follows:

0 indicates that the group MEAN falls in the lowest 10% of the norm group,
1 indicates that there are 10 to 19% of the norm group who received lower means,
2 indicates that there are 20 to 29% of the norm group who received lower means,
and so on through 9.

The following categories have been established to interpret the deciles:

deciles in the 0-2 range are considered "poor",
deciles in the 3-6 range are considered "average" and
deciles in the 7-9 range are considered "good".

The subscale data presented in Table 2 indicates that this group feels that the method of instruction and the course content are above average in comparison to the normative data base. In fact the deciles indicate that the ratings on these two scales place the content and method of instruction in the upper 40% of the normative data base.

Using the pattern of responses on the CIEQ items as a reasonable standard for the other items, one can see that there were only six items that reflect below average ratings. These items are numbers 7, 15, 16, 18, 23 and 25.
If one were to plan improvements in this instruction, those six items should be used to pinpoint the area of weakness. For example, the low deciles for those items might indicate that the students are not confident that they have met the desired instructional objectives of the course and instructors.
<table>
<thead>
<tr>
<th>Items</th>
<th>Responses</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It was a very worthwhile course.</td>
<td>AS 3.46</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>A .52</td>
<td>.45</td>
</tr>
<tr>
<td></td>
<td>D .01</td>
<td>.02</td>
</tr>
<tr>
<td>2. I would take another course that was taught this way.</td>
<td>AS 3.38</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>A .43</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td>D .03</td>
<td>.01</td>
</tr>
<tr>
<td>3. The course material was presented in logical content units.</td>
<td>AS 3.31</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>A .37</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>D .06</td>
<td>.00</td>
</tr>
<tr>
<td>4. The course material was too difficult.</td>
<td>AS 3.34</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>A .02</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>D .42</td>
<td>.34</td>
</tr>
<tr>
<td>5. The course content was appropriate to the aims and objectives of</td>
<td>AS 3.34</td>
<td>.58</td>
</tr>
<tr>
<td>the course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A .38</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>D .02</td>
<td>.01</td>
</tr>
<tr>
<td>6. The course was quite interesting.</td>
<td>AS 3.38</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>A .47</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>D .07</td>
<td>.01</td>
</tr>
<tr>
<td>7. It was NOT clear why certain things were being taught.</td>
<td>AS 3.22</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td>A .02</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>D .36</td>
<td>.44</td>
</tr>
<tr>
<td>8. NOT much was gained by taking this course.</td>
<td>AS 3.51</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>A .01</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>D .28</td>
<td>.61</td>
</tr>
<tr>
<td>9. I would have preferred another method of teaching in this course.</td>
<td>AS 3.34</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>A .04</td>
<td>.12</td>
</tr>
<tr>
<td></td>
<td>D .58</td>
<td>.26</td>
</tr>
<tr>
<td>10. Course concepts were related in a systematic manner.</td>
<td>AS 3.22</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>A .32</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>D .07</td>
<td>.01</td>
</tr>
<tr>
<td>11. The course material seemed worthwhile.</td>
<td>AS 3.38</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>A .42</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>D .02</td>
<td>.01</td>
</tr>
<tr>
<td>12. The course was quite boring.</td>
<td>AS 3.44</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>A .03</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>D .40</td>
<td>.53</td>
</tr>
<tr>
<td>13. I have learned basic information in this course which I will be</td>
<td>AS 3.42</td>
<td>.65</td>
</tr>
<tr>
<td>able to relate to other situations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A .48</td>
<td>.47</td>
</tr>
<tr>
<td></td>
<td>D .02</td>
<td>.02</td>
</tr>
<tr>
<td>14. Overall the course was good.</td>
<td>AS 3.41</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>A .46</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>D .03</td>
<td>.01</td>
</tr>
<tr>
<td>15. I learn more when other teaching methods are used.</td>
<td>AS 2.84</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td>A .06</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>D .64</td>
<td>.13</td>
</tr>
<tr>
<td>16. For the time allotted, topic coverage was exhaustive.</td>
<td>AS 2.65</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>A .08</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>D .28</td>
<td>.07</td>
</tr>
<tr>
<td>17. Some things were NOT explained very well.</td>
<td>AS 2.78</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td>A .02</td>
<td>.33</td>
</tr>
<tr>
<td></td>
<td>D .49</td>
<td>.15</td>
</tr>
<tr>
<td>18. I now feel able to communicate course materials to others.</td>
<td>AS 3.05</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>A .14</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>D .06</td>
<td>.01</td>
</tr>
<tr>
<td>19. I have become more confident in this area because of this course.</td>
<td>AS 3.32</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>A .37</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>D .03</td>
<td>.01</td>
</tr>
<tr>
<td>20. The course was well organized.</td>
<td>AS 3.21</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>A .32</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>D .11</td>
<td>.00</td>
</tr>
<tr>
<td>21. I think that the course was taught quite well.</td>
<td>AS 3.18</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>A .31</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>D .08</td>
<td>.02</td>
</tr>
<tr>
<td>22. The course content was excellent.</td>
<td>AS 3.20</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>A .33</td>
<td>.56</td>
</tr>
<tr>
<td></td>
<td>D .11</td>
<td>.01</td>
</tr>
<tr>
<td>23. Too much material was covered in this course.</td>
<td>AS 2.94</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>A .04</td>
<td>.14</td>
</tr>
<tr>
<td></td>
<td>D .66</td>
<td>.16</td>
</tr>
<tr>
<td>24. The course was helpful in developing new skills.</td>
<td>AS 3.14</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>A .28</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>D .11</td>
<td>.02</td>
</tr>
<tr>
<td>25. I developed an ability to evaluate new work in this field.</td>
<td>AS 3.01</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>A .19</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>D .14</td>
<td>.02</td>
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Table 2
Decile Normative Data for the 13 CIEQ Items and Two Subscales

<table>
<thead>
<tr>
<th>Item Numbers</th>
<th>CIEQ Subscale Designation</th>
<th>U of A</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Course Attitude</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Method of Instruction</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Course Content</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Interest and Attention</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>General Course Attitude</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>Method of Instruction</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Course Content</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>Interest and Attention</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>14</td>
<td>General Course Attitude</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td>Method of Instruction</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>Course Content</td>
<td>5</td>
<td>5</td>
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<tr>
<td>21</td>
<td>Method of Instruction</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>22</td>
<td>Course Content</td>
<td>7</td>
<td>7</td>
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</table>

<table>
<thead>
<tr>
<th>Subscale</th>
<th>MEAN</th>
<th>S.D.</th>
<th>Overall</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of Instruction</td>
<td>3.12</td>
<td>.71</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Course Content</td>
<td>3.18</td>
<td>.71</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>
Dear Validation Registry Participant:

Thank you for participating in the NSF-Funded IEEE Computer-based Registry for Technical Continuing Education non-degree credits.

You will recall that the purpose of this two-year grant has been:

- To motivate persons practicing electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor.
- To develop a model system that will validate practicing engineers' achievements in electrical and electronics continuing education courses.
- An aid to career planning.

As this program approaches its initial evaluation, we need your guidance for future planning.

Please complete the attached questionnaire and return before 1 August 1981.

Thank you for your help.

Very truly yours,

Ray H. Mattson
Program Director

---

PROGRAM EVALUATION QUESTIONNAIRE

Please respond to each statement.

1. This is a worthwhile IEEE Project.
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

2. I would prefer that the Validation and Registry be administered by a centralized organization for all Engineering Continuing Education, such as ABET (Accreditation Board for Engineering and Technology).
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

3. Recognition of participation in an evaluated Continuing Engineering Education course should result in a
   - Certificate of Achievement
   - Course Credit Award Label
   - Certificate of Merit
   - Transcript of all Achievements
   - Permanent Registry of all Achievements
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

4. My Continuing Engineering Education Achievements have been a rewarding personal experience.
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

5. I expect my employer to recognize or reward me for my Continuing Engineering Education Achievements.
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

6. As a Continuing Education Course Participant, I expect a Validation and Registry system to be available
   - as a free professional society member service
   - as a free service for course participants
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

7. I would pay for a centralized Continuing Engineering Education Validation & Registry System that would maintain a permanent registry of my achievements and supply transcripts at my personal request.
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

8. The fee for the registration of each Continuing Education Course Attendance and Transcript should be:
   - $3.
   - $5.
   - Less than $10.
   - You agree strongly
   - You agree
   - You disagree
   - You disagree strongly

MARKING INSTRUCTIONS

AS - You agree strongly
A - You agree
D - You disagree
DS - You disagree strongly
CONTINUING EDUCATION COURSE ATTENDANCE AND PARTICIPANT INFORMATION FORM

Please enter this information into the "Validation of the Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

<table>
<thead>
<tr>
<th>PARTICIPANT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE MEMBER NO</td>
</tr>
<tr>
<td>NAME</td>
</tr>
<tr>
<td>ADDRESS</td>
</tr>
<tr>
<td>TELEPHONE NO.</td>
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</table>

<table>
<thead>
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<th>FIRST ACADEMIC DEGREE INFORMATION</th>
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<td>For IEEE use only.</td>
</tr>
<tr>
<td>COLLEGE/UNIV.</td>
</tr>
<tr>
<td>ABET ACCREDITATION (ECPD)</td>
</tr>
<tr>
<td>FIRST DEGREE</td>
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<td>(Abbreviation)</td>
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<table>
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<th>COURSE ATTENDANCE</th>
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<td>For IEEE use only.</td>
</tr>
<tr>
<td>COURSE SPONSOR:</td>
</tr>
<tr>
<td>Course Coordinator/Instructor</td>
</tr>
<tr>
<td>ADDRESS</td>
</tr>
<tr>
<td>TELEPHONE NO.</td>
</tr>
<tr>
<td>COURSE NUMBER</td>
</tr>
<tr>
<td>COURSE TITLE</td>
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<tr>
<td>NON DEGREE CREDITS</td>
</tr>
</tbody>
</table>

PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM
COURSE EVALUATION QUESTIONNAIRE

PLEASE respond to each statement.

MARKING INSTRUCTIONS
AS - If you agree strongly with the item
A - If you agree moderately with the item
D - If you disagree moderately with the item
DS - If you disagree strongly with the item

1. It was a very worthwhile course. AS_ A_ D_ DS_
2. I would take another course that was taught this way. AS_ A_ D_ DS_
3. The course material was present in logical content units. AS_ A_ D_ DS_
4. The course material was too difficult. AS_ A_ D_ DS_
5. The course content was appropriate to the aims and objectives of the course. AS_ A_ D_ DS_
6. The course was quite interesting. AS_ A_ D_ DS_
7. It was not clear why certain things were being taught. AS_ A_ D_ DS_
8. NOT much was gained by taking this course. AS_ A_ D_ DS_
9. I would have preferred another method of teaching this course. AS_ A_ D_ DS_
10. Course concepts were related in a systematic manner. AS_ A_ D_ DS_
11. The course material seemed worthwhile. AS_ A_ D_ DS_
12. The course was quite boring. AS_ A_ D_ DS_
13. I have learned basic information in this course which I will be able to relate to other situations. AS_ A_ D_ DS_
14. Overall the course was quite good. AS_ A_ D_ DS_
15. I learn more when other teaching methods are used. AS_ A_ D_ DS_
16. For the time allotted, topic coverage was exhaustive. AS_ A_ D_ DS_
17. Some things were not explained very well. AS_ A_ D_ DS_
18. I now feel able to communicate course material to others. AS_ A_ D_ DS_
19. I have become more confident in this area because of this course. AS_ A_ D_ DS_
20. The course was well organized. AS_ A_ D_ DS_
21. I think that the course was taught quite well. AS_ A_ D_ DS_
22. The course content was excellent. AS_ A_ D_ DS_
23. Too much material was covered in this course. AS_ A_ D_ DS_
24. The course was helpful in developing new skills. AS_ A_ D_ DS_
25. I developed an ability to evaluate work in this field. AS_ A_ D_ DS_

Participant's Signature

Date

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918989
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854
The IEEE Educational Activities Board (IEEE) is pleased to announce a new program system to validate and record the continuing education achievements of its members. The program, called the Validation and Registry System, is designed to provide a means for validating and recording continuing education courses and programs, and to maintain a permanent record of each member's achievements. The system will be similar to the Quality Assurance System currently in use by the American Chemical Society and the American Society for Engineering Education.

The program will include the following features:

- The program will include the validation of continuing education courses and programs.
- The program will provide a means for validating and recording continuing education courses and programs.
- The program will maintain a permanent record of each member's achievements.
- The program will be similar to the Quality Assurance System currently in use by the American Chemical Society and the American Society for Engineering Education.

The Validation and Registry System is a comprehensive program designed to meet the needs of all members of the IEEE. It is a self-service system that allows members to submit their own Continuing Education Units (CEUs) for validation. The system is available to all members of the IEEE, regardless of their branch of interest or field of study. The system is easy to use and provides a convenient way for members to keep track of their continuing education credits.

The IEEE validates and records the continuing education achievements of its members. The system is designed to provide a means for validating and recording continuing education courses and programs, and to maintain a permanent record of each member's achievements. The system will be similar to the Quality Assurance System currently in use by the American Chemical Society and the American Society for Engineering Education.

The Validation and Registry System is a comprehensive program designed to meet the needs of all members of the IEEE. It is a self-service system that allows members to submit their own Continuing Education Units (CEUs) for validation. The system is available to all members of the IEEE, regardless of their branch of interest or field of study. The system is easy to use and provides a convenient way for members to keep track of their continuing education credits. The system is designed to provide a means for validating and recording continuing education courses and programs, and to maintain a permanent record of each member's achievements. The system will be similar to the Quality Assurance System currently in use by the American Chemical Society and the American Society for Engineering Education.