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## Off-Campus Instruction Via Video Tape

George E. Lamp Jr.  
*Iowa State University*

Charles L. Townsend  
*Iowa State University*

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## Off-Campus Instruction Via Video Tape

GEORGE E. LAMP, JR. and CHARLES L. TOWNSEND<sup>1</sup>

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SYNOPSIS. The Continuing Education Via Video Tape Program presents Iowa State University graduate and advanced undergraduate courses to off-campus people at or near their place of

employment solely by means of video tapes. Course offerings are primarily in engineering; some non-engineering courses have been and will be taped and shown.

INDEX DESCRIPTORS: Continuing education; education; engineering education; off-campus instruction; television instruction.

Iowa employers and the administration and faculty of Iowa State University have become increasingly aware of the educational needs of engineers working in Iowa. Presenting regular university courses for credit by means of video tapes is only one of several means being used by the College of Engineering and University Extension in attempting to meet these needs.

### PROGRAM DEVELOPMENT

With the assistance of various engineering professional societies in Iowa, the Engineering College Advisory Council, and the Center for Industrial Research and Service at Iowa State, four industries located in three Iowa communities were selected as the first participants in the use of video tape for off-campus instruction in Iowa. This pilot program, conducted during Spring Quarter, 1968, offered one course for credit in Industrial Engineering which dealt with statistics for engineers. Video tapes were made of a live on-campus section. Only video tape instruction was used at the industrial sites. The instructor was generally pleased with the outcome of the course. Scholastically, the off-campus students, as a group, achieved as well as the on-campus students, as a group.

After the success of the pilot program, plans were developed to expand the course offerings and off-campus locations. An on-going program was initiated Spring Quarter, 1969.

The 1969/1970 academic year bears witness to the extent of this continuing education program. During this first full academic year of operation some three hundred different men participated in at least one course. Iowa State University taught thirty-one credit courses plus an EIT Refresher Course via video tape. The capability of making duplicate tapes permitted the teaching of 37 sections of credit courses plus four sections of the EIT course in eleven cities over the complete academic year. Some twenty-five different instructors from eight separate academic departments were involved in this effort. Employees from some twenty companies made up the student body.

During Fall and Winter Quarters of 1970/1971, twenty-four sections of eighteen different credit courses were shown at ten different locations. The EIT Refresher Course was shown at four different locations. Course locations include private industry, government installations, community colleges, and the Quad City Graduate Study Center.

### ON-CAMPUS PROCEDURE

A list of courses proposed for video taping in the coming academic year is drawn up during Spring Quarter in consultation with department heads. This list is sent to each site coordinator (a discussion of the coordinator's role is taken up later) and other interested people at the end of the Spring Quarter. Each site coordinator is asked which courses they would like to have for Fall Quarter and for which they have a sufficient number of interested people. A minimum class size of 5 students is required; however, a contract arrangement can be made if the site wishes to present a course for a class of smaller size. An indication of course needs for Winter and Spring Quarters is also requested.

Courses are allotted to locations on a first-come-first-serve basis with no more than two off-campus sections per quarter for any one course. Other conflicts and problems are resolved; then a letter is forwarded to each site coordinator indicating which courses can be provided for his location and any other courses which would also be available. Students are registered for specific courses at the sites two to three weeks prior to the beginning of each quarter and pay fees according to the fee schedule in the University catalog. A similar procedure is followed for Winter and Spring Quarters.

Three classrooms within the College of Engineering have been equipped to video tape classes. Currently each classroom is equipped with one camera, two recorders, and related equipment; the video tape program has priority in scheduling classes into these rooms. Each classroom has at least three cord microphones, in addition to that of the instructor. This facilitates recording questions and answers and class discussion.

Each student cameraman is expected submit a good tape or tapes by noon of the day after the class meeting; this allows time to remake a tape, if necessary.

When the tapes are returned by off-campus classes, they are usually erased and reused again. Occasionally a course is to be presented off-campus during two or more consecutive quarters. If both the instructor and the department head agree, a complete set of tapes are saved to be reused.

The Engineer in Training Refresher Course is handled somewhat differently since it is not connected with any on-campus class. Several sets of tapes are reserved for use in this course. These tapes would normally be shown in Fall or Winter prior to the EIT examinations in December and April. Although the course was developed with engineering graduates in mind, some non-engineering graduates have taken the course and later passed the EIT exam. A flat fee is

<sup>1</sup>Engineering Extension, Iowa State University, Ames, Iowa

charged for a one-time use of these tapes regardless of the number of people who take the course.

#### OFF-CAMPUS PROCEDURE

Each site location appoints a site coordinator. This person directs the video tape activities at the site such as ascertaining which courses their people might want, assisting in registering students for courses, arranging for classroom and equipment and receiving, showing, and returning tapes.

Playback equipment is provided by the site; this equipment can be leased or purchased. Tapes are received at the site about two days after being recorded and shown approximately a week later. We ask that the off-campus classes meet regularly and with the same frequency as the on-campus classes; i.e., if the on-campus class meets for 50 minutes, three times per week, we would like the off-campus class to do the same.

Course instruction is accomplished solely by video tape. Instructors are encouraged to visit each off-campus class at least twice during the course to become acquainted with the students and engage in discussion not possible otherwise. In addition, arrangements may be made for the instructor to be in his office at certain times to receive calls.

Course requirements are usually the same for both off-campus and on-campus students. Arrangements can be made for reference books from the Iowa State University library to be loaned to the sites.

#### EVALUATION

The video tape program is providing an opportunity for continuing education not otherwise available or not as easily available. A typical off-campus opinion of the program is "This is an excellent idea". Other reactions include:

"In the over all picture, I feel that the student can get just as much from the video tape as from actual classroom participation if the classes are kept small."

"This is the only way we can get technical courses in this area."

An instructor who knows his performance is going to be taped and the tape sent to industry tends to do a better job of preparing for class. This benefits both off-campus and on-campus students.

Instructor visits to off-campus classes provide an additional means of direct contact with industry people, and vice versa. An unusual advantage of video tape classes is instant, or later, replay, for better comprehension or to compensate for absences.

On the other side of the coin, there are a few less desirable effects. Televising a class usually causes some loss of informality and inhibits in-class discussion, at least initially. Sometimes a class may be delayed because of television equipment problems; occasionally a second recording session is necessary, often without the presence of on-campus students. Off-campus students do not have a chance to ask questions at the time they come to mind. An instructor who likes to pace must either limit his exercise or produce a poor tape.

One of the authors has been personally involved with five off-campus sections of the same course over a period of three quarters. An informal comparison of the sum of test scores indicates the median test scores was higher in three off-campus sections than in the on-campus sections, one was about the same, and the median of the fifth section was lower than the median of the on-campus section.

In looking to the future, two other related systems should be mentioned. A number of universities have established live closed-circuit television for conducting credit courses off-campus. Many of these have live audio feedback from off-campus students. Iowa should certainly investigate such a system.

Cassette video tape recorders and players should be available in the near future. Such units will probably be relatively inexpensive and portable. These systems and others which will surely be developed should greatly facilitate continuous education.