



OAKLAND  
COMMUNITY  
COLLEGE

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## ELECTRONICS TECHNOLOGY ADVISORY COMMITTEE MEETING

February 9, 1999

### Members Present:

Cindy Ball, General Motors Midlux Division  
Richard T. Collins, Oakland Technical Center, Northeast Campus  
Rudy Latzko, Saturn Electronics and Engineering Inc.  
Kim Le, Jabil Circuit Inc.  
Timothy R. Pepper, General Motors Metal Fabricating Division

### OCC Ex Officio Members Present:

Sharon L. Blackman, Ed.D., Dean of Technology  
Phillip Crockett, Workforce Development Services  
Patrick Dean, Paraprofessional  
Verna Love, Counselor  
Dr. Robert Powell, Faculty  
Willard Rush, Faculty  
Ruth Springer, Secretary

### Welcome and Review of Minutes

Dr. Sharon Blackman, OCC's new Dean of Technology, introduced herself and welcomed the group. She invited the members to introduce themselves.

The minutes of the Electronics Technology Advisory Committee meeting held on October 30, 1997, were reviewed and approved as written.

### Review of Minutes of Follow-up Meeting

The group reviewed the minutes of the follow-up meeting of OCC staff held on February 19, 1998. There was discussion regarding specific recommendations as follows:

- 9. That DRT 114 be taught using one of the newer software packages, preferably one which does simulation.**

Ms. Cindy Ball reported that she had been considering using AUTOCAD software for this class. However, she has since discovered that Ivex International has a good software package for electronics which can be downloaded from the Internet so students can use it at home. She used this software last year for DRT 114 and found that Ivex is easier to use than AUTOCAD. Students can learn how to draw a schematic and lay out a circuit board. The software does layout and simulation. It is easy to understand and concise. The library is continuously updated with the latest components available. Students can call an 800 number for support. Ms. Ball pointed out that most software packages are similar in their standard features. Once students get accustomed to using any package, they can move on to another one with only a short learning time.

- 1. That OCC obtain the necessary equipment for at least one or two soldering stations capable of removing or installing surface mount technology in order to give students hands-on training in the soldering of fine pitch parts, suggested equipment to include magnifiers, scopes, and lamps.**
- 2. That OCC staff visit the lab at Jabil Circuit or at Electro Linc to see what equipment they have and model OCC's lab set-up after theirs.**

Dr. Powell asked the representatives from Saturn Electronics and Engineering Inc. and Jabil Circuit Inc. to give their perspective on what OCC should be doing to help students in the area of surface mount technology.

Mr. Kim Le responded that, at Jabil Circuit, when they hire technicians, they are looking for people with soldering skill, since they do a great deal of surface mount equipment. If students have this skill before they are hired, they will have the opportunity to obtain a better job. Mr. Le believes there should be soldering equipment and surface mount equipment in the lab so students can practice on it. Most technical institutes do not have training in surface mount technology, so if OCC can give students that training, it will be to their advantage. Jabil currently provides this training in-house.

Mr. Rudy Latzko expressed the opinion that students should be given an introduction to this technology. If they have a basic understanding of it, they will be more marketable. Mr. Latzko does not believe there is a need for a separate course on the subject, or that a great deal of money should be spent on it. Saturn has a certified trainer who trains employees and gives them a hands-on exam. If they do not pass the exam, they will be assigned to another type of work.

Dr. Blackman asked the group if they have hired OCC students, and how they compare with students from other institutions. Mr. Latzko responded that a person with an associate degree would be hired as an engineering technician. If prospective employees already have certain skills, they can start as repair technicians. With no background in the field, they would start at a more basic job.

Dr. Blackman asked the group what type of entry level positions OCC graduates would be able to obtain. Mr. Latzko responded that they would be able to obtain jobs as manufacturing engineering technicians, or possibly quality technicians. Mr. Le stated that, at Jabil, they could work as diagnostic technicians, troubleshooting electronic circuit boards and repairing them. Both agreed that there are a number of possible positions that employees could advance into above those entry level positions.

Mr. Timothy Pepper expressed the view that OCC's role should be to teach students the basics. Then the employer will be able to groom them for the specific tasks they will need to perform at that company. He believes that OCC should teach an introduction to surface mount technology and leave it to the employer to teach the specific skills. Electronics is a big field. Mr. Pepper believes OCC should be teaching the basics, so students are ready to learn the specific skills that an employer may need.

Mr. Latzko suggested that students could be taken on a field trip or tour to a manufacturing facility related to electronics. He believes many companies would be happy to bring a group of students through and show them what a manufacturing plant is like and what types of work are done, including surface mount technology.

Ms. Ball mentioned that she gets a number of calls from recruiters and could place five times as many students as she has in her DRT 114 classes. She feels that it would help our students be eligible to be hired at a higher level of employment if OCC offered a co-op program. It would be helpful if students could spend the last few weeks of their program in industry getting experience in a real job situation rather than just working on scrap circuit boards in class.

Dr. Blackman reported that we have few people coming into this program. Those who do come in often take only one or two courses. The College needs to have a specific number of students in a course in order to teach it and make ends meet. We currently have funds going into programs which have very few graduates. OCC must be accountable for the use of its funds. Dr. Blackman asked the group what we need to do to keep this program viable. All the advisory committees say the same thing. They need people; jobs are available. However, very few people are coming into the program and then moving on into industry. We do not hear the committee saying that the program isn't good, but how do we get students in so we can train them and get them out to you in industry?

Mr. Latzko responded that there is such a demand in industry that people can make fairly good money with very little college education. They take a few courses and get a job, then don't bother to finish their associate degree program.

Mr. Le commented that an assembler would start at \$8.00-9.00 an hour, while someone with an associate degree could start at \$10.00-12.00 an hour. Mr. Latzko agreed that there would be at least a couple dollars difference in starting pay for someone with an associate degree. Then people could advance as they continue their education.

Ms. Verna Love asked what types of positions are available to high school students with electronics training. Mr. Richard Collins responded that many of his students are hired at Jabil. Mr. Collins teaches them basic electronics, soldering, and schematic reading. He refers his good students to Jabil, which has tuition reimbursement, so they can take classes at OCC part-time while working there. OCC has an articulation agreement with his school, so students get advanced placement credit.

Dr. Powell asked the group whether the College should budget for two soldering stations to teach surface mount technology, as stated in recommendation 1. The group agreed that the cost of a soldering station would be about \$1800. A scope would cost \$2000.

Dr. Blackman asked about the possibility of the equipment being donated by a company. Mr. Dean reported that Jabil would be willing to assist with mountings and half of the product. Mr. Le said that perhaps Jabil could donate one of their machines.

It was pointed out that most of our students will go to work in companies where they will not use surface mount technology. At Jabil and Saturn, they rebuild boards. But the average technician will either replace a faulty board or bring someone out from the manufacturer to repair it. This would be a highly specialized type of training to provide for a small percentage of OCC students who would actually use it on the job.

In addition, it was pointed out that OCC really does not have the space to add soldering equipment to the Electronics Lab. There is also the environmental issue of fumes. Fume extractors would be a necessary part of the cost as well.

Dr. Blackman summarized the opinion of the group, that because of space and funding considerations, it would not be advisable for OCC at this time to add to the Electronics Lab the equipment necessary to teach surface mount technology. However, we should consider the possibility of exposing students to the concept in other ways.

It was suggested that video tapes could be shown, and students could each be provided with a circuit board to look at while viewing the video. Perhaps students could be taken on field trips to Jabil and Saturn as well.

Ms. Ball asked whether the College would be able to obtain the appropriate video tapes before the next advisory committee meeting. Dr. Blackman responded that that would need to be considered as an item in need of follow-up action. We need to consider the cost, as well as how to incorporate the instruction into the curriculum.

### **Manufacturing Technology Academy**

Dr. Blackman asked the group whether there are any trends in industry of which we need to be aware in order to better prepare our students for the jobs of the future.

Mr. Collins commented that he sees a number of positive things coming in the future as a part of the new Manufacturing Technology Academy program which is being developed by Oakland Schools and OCC. He believes the new courses and curriculum which are developed will have a positive effect on the Electronics Program.

Dr. Powell agreed, stating that he and Dr. Blackman are both members of the committee which is developing this program. It is expected that four Electronics courses will be a part of the curriculum.

Dr. Blackman explained that the DaimlerChrysler Foundation is providing funding for the development of this new program which is similar to Tech Prep. Students begin studies in the Manufacturing Technology Academy program at their high school and continue them at OCC. After earning an associate degree here, they may continue on to a four-year institution if they wish. Students will be prepared for jobs as manufacturing technicians. This is a generalist position with the capability of specializing in certain areas. The OCC team which is developing our part of the curriculum consists of Technology Department members, as well as instructors in English, Math, and Physics. An attempt is being made to design integrated courses. Students would take a manufacturing course, but also receive Math, English, and Science credit for subject areas from those disciplines covered in the course. Work is being done now to identify the skills needed by someone performing that job. The next step will be to take those skill lists and design courses around the competencies needed. Current courses may be used, or new courses may be designed if necessary in some cases. Oakland Schools has already done an outstanding job of outlining skill competencies and matching national skills standards to their curriculum. Once the OCC program is in place, it could also be available to other students in addition to those who have come through the Manufacturing Technology Academy with Oakland Schools. A way

would need to be found to bring those students up to speed on the material they missed by not being a part of the program in high school.

### **Appreciation**

Dr. Blackman thanked the group for their service as members of the advisory committee. She presented each member with a certificate of appreciation and a small gift.

### **Advisory Committee Recommendations**

1. That OCC not obtain the necessary equipment to have soldering stations in the Electronics Lab.
2. That OCC provide Electronics students with instruction in surface mount technology by showing video tapes and providing students with circuit boards to look at while viewing the video. Students could also be taken on field trips to companies such as Jabil and Saturn.

Respectfully submitted,

Ruth Springer

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