

12-8-1988

Academic Standards & Curricula Review 11-18-88 (received 11-28-88)

Marshall University

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DEC 01 1988

Recommendations from Academic Standards and Curricula Review Committee

November 18, 1988

Recommendation #1

The motion was made, seconded and passed to approve a new A.A.S. program in Engineering Technology as presented by the Community College. Motion discussion related the importance of adopting this program to economic development efforts of Marshall University and the belief that programs such as this need to be in place in order to generate grants that aid in development and financing of additional programs that are needed to further economic development goals of the community.

Senate President:

Approved Rainey Duke Date 11/29/88 Ex. Com 12/8/88 Senat

Disapproved _____ Date _____

University President:

Approved Dale Fitzgibbon Date 11/30/88

Disapproved _____ Date _____

Recommendation #2

The motion was made, seconded and passed to approve 4 new honors courses. (See attachment) Motion discussion included comments that there is a need to have a challenging honors program in order to attract bright students and provide them with a setting where they can interact with other bright students.

Senate President:

Approved Rainey Duke Date 12/8/88

Disapproved _____ Date _____

University President:

Approved Dale Fitzgibbon Date 12/12/88

Disapproved _____ Date _____

Dale,
Carol has
these forms.
Sent them
today Rainey



MEMORANDUM

TO: Mahlon Brown, Chairman
Academic Standards & Curricula Review

FROM: Mary Etta Hight, Chairperson *ME Hight*
Curriculum Sub-Committee

DATE: November 17, 1988

RE: Action Taken on Curricula 14 November

The Curriculum Sub-Committee met on 14 November 1988. Members representing all colleges except COFA and the School of Nursing were present. The following actions were taken:

1. Approved New Courses:

HST 103H Twentieth Century World Honors
HST 330H American History to 1877 Honors
HST 331H American History Since 1877 Honors
PHL 200H Introduction to Philosophy: Ancient Period Honors

2. Approved Program for an A.A.S. Program in Engineering Technology:

Dr. Wilkin was present to answer questions, and accepted suggestions for minor amendments, and inclusion of an occupational description of graduates of the program. The program was approved as amended.

3. Approved Deletion:

SPH 245 Listening

SPH 245 has been superceded by SPH 345, Listening and Feedback. SPH 245 was inadvertently not deleted when SPH 345 was proposed.

MARSHALL UNIVERSITY

COMMUNITY COLLEGE

Huntington, WV

New Program Proposal

Associate of Applied Science Degree
in
Engineering Technology

Application Date: November 1, 1988

Proposed Implementation: Fall 1989

SUMMARY

The objectives of the Engineering Technology program are to promote economic development, to coordinate with baccalaureate programs, to meet employer needs, to serve students seeking the degree and students seeking retraining, and to award 10 to 15 A.A.S. degrees per year.

The program is designed to meet the standards of the Technology Accreditation Commission/Accreditation Board for Engineering and Technology. There is a core curriculum of 51 credit hours and several specializations at 15 credit hours (66 total). Current laboratories are adequate for the program; two (2) full-time faculty, four (4) part-time faculty, and operating funds are necessary.

This program directly supports Marshall University's goals and does not duplicate any existing program in the region.

PART I
PROGRAM DESCRIPTION

A. PROGRAM OBJECTIVES

The Engineering Technology program has both academic and economic development objectives. The academic objectives are to meet demonstrated student interests, to coordinate with appropriate bachelor's degree programs, to serve students seeking courses for updating technical skills, to serve students seeking the degree and to award 10 to 15 Associate of Applied Science (A.A.S.) degrees per year.

The economic development objectives are to provide and/or upgrade technicians for industry, to provide faculty consulting to help upgrade existing industry, and to serve as a demonstration/showplace to attract new industry.

In addition, the Engineering Technology program will be coordinated with the proposed Institute for Advanced Flexible Manufacturing Systems. Through the Institute, the Engineering Technology laboratories will be available to faculty and industry for research and product development (See Appendix A for details).

B. PROGRAM FEATURES

1. Admissions and Performance Standards

Students must meet the Marshall University Community College admission and performance standards as stated in the Marshall University Catalog (See Appendix B).

2. Program Requirements

The Engineering Technology program is designed to meet the standards of the Technology Accreditation Commission/Accreditation Board for Engineering and Technology (TAC/ABET). There is a core curriculum of 51 credit hours that will be taken by all Engineering Technology degree candidates. In addition, students will select a specialization that provides an additional 15 credit hours, for a total of 66 credit hours.

Per the needs analysis, the initial specializations will be in manufacturing and computer aided drafting (CAD). Other specializations may be considered at a later date, depending on needs and resources available.

The program will contain three components of instruction and evaluation: classroom, lab, and field internship.

- a. Classroom: Lectures, discussions, and demonstrations presented by instructors and professionals.
- b. Computer/Robotic/FMS lab: Hands-on application of lecture information and demonstration for the purpose of developing working skills. Current laboratories are adequate to begin program.
- c. Field Internship: Evaluation of on-the-job performance in the industrial environment.

Please review the curriculum details that follow. Note that many of the courses included in the program are already listed in the Marshall University Catalog, and that only four (4) new courses are initially required.

Note also that the Marshall University Community College plans to terminate the Industrial Supervision and Management (ISM) program, and that five manufacturing related courses will be retained for the Engineering Technology program.

Course descriptions are given in Appendix C.

ENGINEERING TECHNOLOGY

FIRST YEAR

FIRST SEMESTER		HRS
CHM 203	General Chemistry I	3
CHM 213	Identification of Elements (lab).....	2
COM 111	Communications I	3
CT 103	Fundamentals of Computer Technology	3
MAT 145	Technical Mathematics I	3
	Specialization	3
	or	
	Elective (Liberal or Fine Arts) ¹	(3)
		17
SECOND SEMESTER		
BUS 201	Human Relations in Business	3
COM 132	Technical Communications II	3
CT 220	CAD for Technicians	3
MAT 146	Technical Mathematics II	3
	Specialization	3
		15

SECOND YEAR

FIRST SEMESTER		
CT 210	Introduction to Robotics	3
MTH 140	Applied Calculus	3
PHY 200	Introductory Physics	3
PHY 200L	Introductory Physics Laboratory.....	1
	Specialization	6
	or both	
	Specialization	(3)
	Elective (Liberal or Fine Arts) ¹	(3)
		16
SECOND SEMESTER		
COM 231	Technical Report Writing	3
CT 277	Flexible Manufacturing Systems	3
	Specialization	9
	Internship/Co-op	3
		18
¹ Core Courses: 51 hours; Specialization: 15 hours		66

¹ Students take 15 hours of specialization courses and 3 hours elective (Liberal/Fine Arts).

SPECIALIZATIONS

COMPUTER AIDED DRAFTING (CAD)

		Credit Hours
EG 101	Engineering Graphics	3
*	Detailing and Dimensioning	3
*	Advanced 2D and 3D CAD	3
*	Graphic Simulation and Modeling	3
*	Speciality CAD Software	3
		<hr/> 15
*New Courses		

MANUFACTURING

		Credit Hours
ISM 116	Manufacturing Processes	3
ISM 231	Industrial Materials, Processes, and Flow	3
ISM 233	Quality Control	3
ISM 234	Operation Planning and Scheduling	3
ISM 237	Production and Inventory Control	3
		<hr/> 15

C. PROGRAM OUTCOMES

The program outcomes are directly related to the academic and economic development objectives, as follows:

<u>ACADEMIC OBJECTIVES</u>	<u>OUTCOMES</u>
Coordinate with appropriate bachelor's degree programs.	Future plans are to coordinate curriculum with related bachelor's degrees.
Engineering Technology courses	Fully implement curriculum beginning fall 1989. Enroll up to 35 students per semester interested in courses for retraining.
A.A.S. Degrees	Award 10 A.A.S. degrees by Spring 1991, and increase to 15 A.A.S. degrees per year by Spring 1993.

ECONOMIC DEVELOPMENT OBJECTIVES

<u>ECONOMIC DEVELOPMENT OBJECTIVES</u>	<u>OUTCOMES</u>
Provide/Upgrade Technicians for Industry	In addition to college credit courses (previously stated) utilize faculty and facilities to offer seminars for industry starting with 2 per year during 1989/90 and increasing to 4 per year by 1991/92. Work with professional societies such as American Production and Inventory Control Society, to insure appropriate curriculum content.
Provide faculty consulting to support and help upgrade existing industry.	Initially, help 2 industrial entities per year, increasing to 5 per year.
Serve as demonstration/showplace to attract new industry.	Faculty and facilities will be available to the Governor's Office of Community and Industrial Development (GOCID), the Huntington Area Chamber of Commerce, the Center for Regional Progress, the Huntington Industrial Corporation, and so forth, to help sell area.

Coordinate with proposed
Institute for Advanced
Flexible Manufacturing
Systems.

Faculty and laboratories will be
available to industry for research and
product development, per Institute
guidelines (See Appendix A for
Institute information).

(Job Desc.)

PART II
PROGRAM NEED AND JUSTIFICATION

There are two inseparable variables: technology and regional development.

Over the past two decades, the Huntington Region has experienced a steady decline in manufacturing and industry. Some major reasons for this decline are that much of the "older" technology used locally was never updated, significant new products were never developed, and the Region has not been very successful in attracting new industry. The Region simply does not have the technical base to maintain and attract industry.

Beyond technology, there are other factors that influence industrial and manufacturing locations. Fortunately, most of the elements necessary to re-industrialize the Region are now in place. Consider these assets:

<u>ASSET</u>	<u>STATUS</u>
Land	Plentiful, reasonably priced.
Energy	Coal, gas plentiful locally. Electricity available.
Capital	The Region is a center for banking and insurance. Wealth from minerals. Local capital available.
Labor	Region has had the highest unemployment in nation. Labor available, but not educated in technology.
Transportation	Interstate highway, main railroad line, major river, commercial airport.
Housing	Due to recent out-migration, over 2,000 units on market.
Business Tax Structure	Previous "bad" image. The "New West Virginia", per national advertising campaign, offers special tax incentives to new enterprises.

The Region is within a day's
of
the country.

Quality of Life

Strong support for arts. Many parks, rivers, lakes. No problems with congestion, pollution. Lowest crime rate in country. Regional medical center. Large modern shopping mall.

Education

Strong state university -- but technology programs extremely limited.

The Region obviously has many very strong assets. This Engineering Technology program proposal addresses the one glaring deficiency in the Region's portfolio of assets -- technology education.

The first two Engineering Technology program specializations will be manufacturing and CAD. The factory of the future will be highly automated, intensely robotic and computer controlled. The Region must update to this technology to compete successfully in world markets and --in turn-- provide regional employment.

A. RELATIONSHIP TO INSTITUTIONAL GOALS/OBJECTIVES

The Agenda for Action 1985-1990, approved May 1985 by the Board of Regents, contains this proposed Engineering Technology program (A.A.S.) by the Marshall Community College (See Appendix D). This program satisfies two goals of higher education:

1. To expand programs leading to career opportunities;
2. To expand continuing education, community interest, and public service activities on a non-credit basis.

Furthermore, the economic development aspects of the program fully complement Marshall University's enhanced attention to economic development.

The Letter of Intent for this program was approved December 16, 1987, by the Board of Regents (See Appendix D).

The preliminary planning for this program has been entirely within the Marshall University/Board of Regents planning structure.

B. EXISTING PROGRAMS

The purpose of community colleges is to serve community needs. Students seldom relocate, indeed often cannot relocate, to attend a community college. In order to meet the academic objectives, the Engineering Technology program must be in Huntington.

As noted previously (see Part II), the Huntington area has outstanding assets for developing industry. In order to meet the economic development objectives of upgrading technicians, helping existing industry, and attracting industry, the Engineering Technology program must be located in Huntington.

The Directory of Postsecondary Educational Opportunities lists some type of Engineering Technology program at twelve colleges. Of these, only four are related to manufacturing (manufacturing, industrial/mechanical). These are located at Fairmont, Parkersburg, Salem, and Montgomery. Clearly, these programs cannot serve the Huntington area.

Drafting and/or Design programs are available at six colleges, located at Fairmont, Parkersburg, Logan, Montgomery, Wheeling, and Institute. Again, these programs cannot serve Huntington.

C. PROGRAM PLANNING AND DEVELOPMENT

This program was included in the Agenda for Action 1985-90, and the letter of intent was approved in 1987. The proposal has been prepared by existing faculty and staff of the Marshall University Community College at no additional resource requirement.

Planning activities have been conducted on several fronts. An ad hoc Program Advisory Committee, representing regional industry, was formed to provide advice on the curriculum (See Appendix E for details). The Center for Regional Progress, housed here at Marshall, has provided substantial "needs analysis" information (See Sections D and E below).

Substantial efforts have been made to insure that the program coordinates with and complements the proposed Institute for Advanced Flexible Manufacturing Systems.

This proposal has been developed by a Dean with a Master's degree in engineering, a Chair with a Master's degree in Engineering/Information Systems, a faculty with an engineering degree, and another faculty with 13 years experience in local industry. The judgment of these individuals was honed by reviewing other related programs.

Finally, this proposal will be approved by the Marshall Community College Curriculum Committee, the Marshall University Faculty Senate, and the President of Marshall University.

D. CLIENTELE AND NEED

As discussed throughout this proposal, the clientele served by this program would include both students and industry.

With respect to meeting the needs of industry, a recent report, "Establishing Programs to Meet Manufacturing Needs in the Huntington, West Virginia, Tri-State Area," provides current and valuable information. The report, which surveyed 246 local manufacturers (15% return), says (p. 2) "...manufacturers can benefit from ... training The results of this study will be used to guide the development of programs to provide manufacturers with the kinds of technology training they need in order to improve their competitive position" (See Bibliography, Appendix K).

The report notes the importance of new product development and new "high tech" company development. The report also notes the importance of utilizing "high tech" manufacturing processes for existing products (p. 3):

In many cases, their (distressed manufacturers) path to economic viability is through the use of existing, commercially available technologies to improve their production systems. These technologies include robotics, computer aided design (CAD), computer numerically controlled (CNC) machinery, flexible manufacturing systems (FMS) and the use of computers for production planning and inventory controls.

Today's available advanced manufacturing technologies offer manufacturers an opportunity to improve their productivity and their ability to compete more effectively. They provide the ability to produce higher quality products at a lower cost with greater flexibility. According to George Kuper, Executive Director, Manufacturing Studies Board, National Academy of Sciences, technology can account for as much as 60 percent of all productivity improvements in manufacturing firms.

Recent reports, however, indicate that U.S. industry has been lagging in its use of these technologies, a factor which has made many sectors of the economy increasingly vulnerable to import competition. One of the conclusions of the President's Commission on Industrial Competitiveness was that, "Perhaps the most glaring deficiency in America's technological capabilities has been our failure to devote enough attention to manufacturing or 'process' technology.... The United States has failed to apply its own technologies to manufacturing."

In addition to identifying the technology that manufacturers should be using, the report corroborates the concern that state-of-the-art technology is not being used. No manufacturers report using robotics, only 2.6% use lasers, only 5.3% use Statistical Process Control, only 7.9% use CAD, only 15.8% use CNC, and apparently no one has linked CAD and CNC for true computer integrated manufacturing.

With respect to student needs, three areas have been examined. The first area examined is the linkage of the Associate of Applied Science degree with Baccalaureate programs, and again efforts are underway. Through a series of meetings beginning the 1986/87 school year, Marshall University's Academic Vice President and the Deans of Business, Science and the Community College have explored potential programs. On a national basis, about fifty colleges now offer Bachelor's degrees in Engineering Technology. Again, it is clear that there is local and national support for linking the A.A.S. in Engineering Technology with baccalaureate programs (See Appendix F for details).

The tri-state area study cited previously also speaks to providing coursework for current manufacturing personnel to upgrade their technical skills. These mid-career students would take selected courses, but would probably not pursue the complete degree program. Others would take shorter, non-credit technical seminars. These students not pursuing a degree may represent up to half of the program enrollment.

The third area examined is the degree candidate. Students would select the program after realizing the enhanced employment opportunities in the manufacturing and CAD fields (See Section E below).

E. EMPLOYMENT OPPORTUNITIES

On a national basis, employment opportunities are quite obvious. For example, Parnell (p. 12) lists engineering technicians among the twenty fastest growing occupations (See Bibliography Appendix K).

The standard reference for employment opportunities, the U.S.-D.O.L. Occupational Outlook Handbook, discusses three related technician occupations: engineering technicians, drafters and numerical control tool programmers. Again, technician occupations are one of the fastest growing categories (p. 12). The Handbook notes the current revolution in technology whereby CAD is replacing drafting by hand (p. 206) and the CAD-machine interface is replacing tool programmers (p. 211). The U.S.-D.O.L. states "...many employment opportunities are available to those with state-of-the-art skills." The Engineering Technology program is designed specifically to meet these needs.

On the regional level, as noted in Section D (p. 10), employment opportunities for state-of-the-art technicians are just beginning to occur. One purpose of this program is to accelerate the utilization of these technicians in the region. The College and University are taking a leadership role in this area, rather than following someone else's lead.

F. PROGRAM IMPACT

The Engineering Technology program will increase enrollment in the core courses, all of which are required in one or more other programs. Remember that those students not pursuing the degree will not take many of the general education courses. In some cases, students will fill existing seats in general education courses; in other cases additional sections will be needed.

At present, no other program would depend on the Engineering Technology program.

G. COOPERATIVE AGREEMENTS

As mentioned previously, linkages are being explored with baccalaureate programs. There will be substantial cooperation with industry regarding courses, seminars, research and product development. There will also be substantial cooperation with all economic development efforts.

Within Marshall, the required courses in Chemistry, Physics, Calculus and Engineering Graphics are available through the College of Science. The Liberal or Fine Arts electives will be available through those colleges.

H. ALTERNATIVES TO PROGRAM DEVELOPMENT

There are no related programs available in the region. Marshall must develop technology programs to help re-industrialize the region.

PART III

PROGRAM IMPLEMENTATION AND PROJECTED RESOURCE REQUIREMENTS

A. PROGRAM ADMINISTRATION

The program will be directly administered by the existing Chairman of the Division of Applied Science Technology, who is responsible to the Dean of the Community College.

No additional administrative personnel are necessary.

B. PROGRAM PROJECTIONS

(See Appendix G)

C. FACULTY INSTRUCTIONAL REQUIREMENTS

Two full-time faculty and four part-time faculty will be needed (See Appendix I).

D. LIBRARY RESOURCES AND INSTRUCTIONAL MATERIALS

Current library holdings are sufficient to initiate the proposed program (See Appendix H). Phased updating of instructional material will occur in revised textbooks, and additions in journal subscriptions and audiovisual material in the library will be suggested.

Note also that the local chapter of the American Production and Inventory Control Society (APICS) has been providing appropriate journals and reference material to the Marshall Library.

E. SUPPORT SERVICE REQUIREMENTS

No additional support services will be required.

F. FACILITIES REQUIREMENTS

Existing facilities will be adequate for the initial program. Marshall's "high tech" lab has 20 CAD workstations, including a plotter and laser printer. There is a complete metal manufacturing FMS work cell, and various robots (See Appendix J).

G. OPERATING RESOURCE REQUIREMENTS

(See Appendix I)

H. SOURCE OF OPERATING RESOURCES

Operating resources would come from appropriated funds (3200), HERF funds (8600-11) and voc ed funds. In addition, resources from contracted instruction and services for industry will allay some expenses.

PART IV

PROGRAM EVALUATION

A. EVALUATION PROCEDURES

The Engineering Technology program will be evaluated on a five-year cycle according to the standards and procedures required by the West Virginia Board of Regents.

B. ACCREDITATION STATUS

The Engineering Technology proposal has followed the accrediting guidelines of Technology Accreditation Commission/Accreditation Board for Engineering and Technology. Accreditation will be sought following the graduation of the first students expected in the Spring of 1991.

APPENDICES

- A. Institute for Advanced Flexible Manufacturing Systems
(Proposed)
- B. Marshall University Community College Catalog, pp. 177-181,
Admissions and Performance Standards
- C. Position Description and Course Descriptions
- D. Agenda for Action 1985-1990 (p 29), Letter of Intent, Board of
Regents Approval of Letter of Intent
- E. Ad Hoc Program Advisory Committee
- F. Comments from Dr. Carol Smith, Vice President Academic Affairs
- G. Program Projections
- H. Letter of Accommodation, Marshall University Library
- I. Operating Resource Requirements
- J. Existing Lab Equipment
- K. Bibliography

FACTORY OF THE FUTURE: Institute for Advanced Flexible Manufacturing Systems

THE PROBLEM:

Manufacturing has changed and manned mass production assembly lines have been replaced by automated, flexible computer-integrated manufacturing systems capable of producing a relatively small number of components which then can convert to the production of other items as needed. Recent advances in robotics, electronics, software and computer-aided design and engineering have made this new Industrial Revolution possible. Consequently, economies of scale, adaptability to changing needs, and improved quality control can be achieved. These factors are increasingly important to manufacturers' competitiveness in terms of cost, quality, and smaller scale production.

THE PROJECT

The establishment of the FACTORY OF THE FUTURE: INSTITUTE FOR ADVANCED FLEXIBLE MANUFACTURING SYSTEMS at Marshall University is considered a viable option for initiating economic restructuring in the State and most especially in southern West Virginia. Likewise, the FACTORY can serve as a national demonstration project and model which can be used to transfer new technologies in manufacturing in other parts of the country.

The FACTORY OF THE FUTURE: INSTITUTE FOR ADVANCED FLEXIBLE MANUFACTURING SYSTEMS at Marshall University would strengthen the economy of West Virginia and the region by offering incubator services for start-up as well as fledgling businesses and industries in order

to provide shared support services, lower overhead costs, and freeing monies for expansion. Furthermore, the Institute would provide time-sharing opportunities in this user-specific facility for those businesses and industries offered larger contracts.

ORGANIZATION:

While the FACTORY OF THE FUTURE will be central to the Institute's operation, the Institute itself will be organized on a free flow of information among and within the various components, as well as between the Institute and various outside entities. These centers, based generally on the Institute's objectives, are: Information Resources and Research Center (IRRC), Research and Development (R&D), Operations and Technical Services (OT), and Education and Training (ET). These centers will:

- provide available information resources and research, analysis, and user assistance by facilitating inquiries and responses from business and industry (IRRC)

- provide and facilitate research and development on existing and emerging technologies for further advancement in research and development particularly in the areas of robotics, artificial vision, image processing, electro-optical systems, CAD/CAM, electronics, computer hardware and software, and engineering applications (R&D).

- provide operating Computer Integrated Flexible Manufacturing Systems (CIFMS) capabilities for training, time sharing/incubation, CIFMS networking, and demonstration of CIFMS facilities/processes (OT).

- provide for educational and training programs to facilitate and support a learning environment. This center will include such program areas as engineering technology, manufacturing engineering, applied physics and computer science (ET).

PROJECT IMPACT:

The full implementation of the Institute, to be located at Marshall University in Huntington, West Virginia will:

- update technology and innovation within the state and region to assure successful competition in regional and national markets as well as to meet world demand;

- provide state-of-the-art education and retraining for technicians and supervisors in emerging technologies and the management of technology;

- provide joint venture opportunities between the university and industry in the development of new products, materials, and processes;

- provide applied research and consultation services to new and existing business and industry;

- provide incubation opportunities for entrepreneurs;

- accommodate military emergency needs and sustain capacity in national emergencies, at minimum cost;

- provide CAD/CAM network support for time-sharing and technology transfer;

- promote economic development and job creation in a geographical location where such activity has not been possible in the recent past.

Community College

MISSION OF THE COLLEGE

The Community College, an open door institution, primarily serves Cabell, Wayne, Lincoln, and Mason counties by providing postsecondary programs of study which are chiefly occupational-technical in nature. The College's curricula reflect the occupational, educational, and cultural needs of youth and adults in the area. The College offers educational opportunities to any student who can benefit from instruction, regardless of age or academic preparation.

The Community College offers two-year Associate Degree programs and shorter Certificate of Proficiency programs.

Opened in 1975, the College enrolls 1,850 students.

PROGRAMS

The Community College offers programs to meet identified student needs. The programs include:

1. Programs and courses of an Occupational-Technical nature.
 - a. Occupational-Technical Programs which culminate in an associate degree or certificate of proficiency.
 - b. Occupational-Technical Courses for students interested in specific skills and knowledge, but not a certificate or degree.
2. Developmental and General Studies Courses to improve academic skills for entry into and success in specialized programs:
 - a. Courses in reading, writing, and mathematics to assist students in reaching mastery level in basic skills.
 - b. Courses designed to supplement Occupational-Technical Programs.
 - c. Core courses to acquire specific skills for immediate employment.
3. Short-Term Courses to acquire specific skills for immediate employment. Courses are usually developed in cooperation with business, industrial, and public service employers in the community.
4. Community Service/ Continuing Education Courses which may be vocational or avocational in nature. Community Service Courses deal with crafts, hobbies, and cultural activities. Continuing Education Courses offer opportunity to retain and/or upgrade particular work-related skills.

ADMISSION

Regular admission to the Community College is open to any person who has a high school diploma or who meets General Education Development (GED) requirements.

Other persons may be admitted on a conditional basis but will be evaluated at the conclusion of each semester of enrollment to determine whether college-level academic performance indicates an ability to continue their studies.

Neither regular nor conditional admission shall ensure the entry of applicants into specific programs.

Because of the broad range of students who seek admission, developmental courses will be provided to assist students to reach competencies in reading, mathematics, writing, and study skills when the need is identified.

Several types of admissions are offered.

Admission to Associate Degree Programs. To enroll in a degree program a student must have a high school diploma or its equivalent and must follow regular Marshall University admission procedures. Advanced placement in some programs is possible if the student successfully passes a challenge examination in the specific course area.

Admission as a Non-Degree Student. Non-degree students do not require a high school diploma or its equivalent. They must follow Marshall University admission procedures and are eligible to take any Community College offering. However, if they decide to pursue a degree program in the College, they must meet regular Community College admission requirements and follow the program curriculum.

Early Admission. The Community College follows Marshall University policy.

Application for admission to the Community College is made through the Marshall University Office of Admissions.

COMMUNITY COLLEGE ACADEMIC TESTING POLICY

All students enrolling in the Community College are required to take the "Test of Academic Skills" prior to registration. Advisors, prior to scheduling new students, will review test scores to determine which students should be scheduled into advanced or developmental courses. Students must enroll for needed developmental courses as soon as possible.

Off-campus testing is announced and accomplished as part of the registration process. In areas where Community College developmental courses are not available, arrangements must be made for alternative instruction which has the approval of the Community College.

Certain groups may be exempt from testing as determined by the Dean of the Community College.

ADVISING/COUNSELING

Community College faculty provide academic advising to students majoring in occupational-technical programs. Each student's registration must be approved by a faculty advisor.

The Office of Guidance Services offers educational, vocational and personal counseling to Community College students. The free services are available upon request.

TRANSFER

West Virginia Board of Regents policies require state system institutions to accept up to 72 semester hours of credit by transfer from the Community College of Marshall University. If the Community College courses are reasonably comparable to Baccalaureate program courses, the Community College credits transfer as Baccalaureate course requirements. If the Community College courses are not comparable, the Community College credits transfer as electives. Transfer credit is determined by the receiving school or college.

Several other transfer mechanisms are available to Community College students, as noted below, but not all colleges offer these options.

1. **Testing Out.** Community College students take an exam(s) to demonstrate their knowledge and skills. The exam(s) is given by the four-year college, and credit is awarded based on the results of the exam(s). See admission by General Education Development Tests.

2. **Success in Advanced Courses.** Community College transfer students are allowed by the four-year college to take advanced courses, even though the students do not meet specific prerequisites. The students have, rather, taken related courses at the Community College. If the students pass the advanced course, the four-year college accepts the Community College courses in lieu of the specific prerequisites.

3. **Two-Plus-Two Programs.** The upperclass courses of a four-year college are especially designed to accept the Community College transfer student. (See Legal Studies in College of Liberal Arts and Finance-Banking Option in College of Business).

APPENDIX B (continued)

4. **Geo-Social Studies.** This is a special course-based Bachelor's degree program at Marshall University. Any Community College graduate, regardless of course-based program, can take two more years of courses through the Geo-Social Studies program and receive a Bachelor's degree. (See Geo-Social Studies Degree).

5. **Board of Regents Bachelor of Arts Program.** This program is a mix of course-based and experiential-based learning. Community College courses transfer without difficulty.

Students contemplating transfer are advised to contact the appropriate dean or institution for a review of their transcripts, to discuss available transfer mechanisms, and to determine the specific number of hours which may be credited directly toward a baccalaureate program.

ATTENDANCE POLICY

The Community College follows Marshall University policy with the following additions: The Community College faculty considers regularity of attendance and punctuality as two major elements in the maintenance of a satisfactory scholastic record.

An absence is assessed each time a student is not in attendance during a regularly scheduled period of instruction. This assessment does not depend on the cause for the absence and applies to both class and laboratory sessions. In each semester, the assessment of absences begins with the first scheduled day of class.

Courses provided by the Community College have varied lengths for their class sessions. Absences will be assessed in proportion to the time spent in each session. In courses that have 50-minute sessions, missing one class session will constitute one (1) class absence. In courses meeting for 75 minutes, missing one class session will equal one and one-half (1½) absences. In courses meeting for 150 minutes, missing one class meeting will constitute three (3) absences.

Absence from a class, lecture, or laboratory session does not excuse a student from the full responsibility for class work or assignments missed or accountability for the absence incurred.

Students who are employed full time while attending one or more Community College courses and are involved in shift work or possible overtime work should confer with each instructor immediately following the first class session regarding their attendance and class activities.

Students are required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor counts the examination as zero and reports the final grade of "F". If the absence is the result of illness or some other valid reason beyond the control of the student, the grade of "I" is reported, and the student may, upon application, take the examination at a later date.

ACADEMIC PROBATION

1. The student whose cumulative scholastic record shows a deficit of one (1) quality point but no more than nineteen (19) quality points will be placed on probationary status.
2. A transfer student whose total record shows a deficit of one (1) to nineteen (19) quality points at time of admission will be assigned a probationary status as though the deficit had been accumulated in residence.

RESTRICTIONS ASSOCIATED WITH PROBATIONARY STATUS

Any student on probation will have restrictions regarding scheduling and registration for classes. An accrued deficiency of one (1) to nineteen (19) quality points carries the following restrictions:

APPENDIX B (Continued)

1. Students will be placed on academic obligation.
2. Students will be allowed to register for a maximum of 13 semester hours.
3. Student's schedule must be approved by assigned advisor.
4. Student must receive registration approval from Dean's office.

TERMINATION OF PROBATION

The student on probation as the result of a grade-point deficiency will remain on probation until his/her quality-point deficiency is reduced to 0 and he/she achieves a 2.0 (C) overall grade-point average.

ACADEMIC SUSPENSION

1. The student with a cumulative deficit of 20 quality points or more at the end of a term will be suspended for a period of one semester.
2. The application of a transfer student suspended from any college at Marshall University shall not be considered for transfer until his/her period of suspension has expired. The Community College honors the suspension of a student from any other college, and such a decision is treated as a prior suspension from the Community College.
3. A student may petition immediately upon notice of academic suspension if illness, accident, or other valid circumstances can be verified as the cause of poor academic performance. This written petition should be addressed to the Academic Appeals Committee, Community College.
4. A student who has been academically suspended may attend summer sessions without a written petition; however, a student who is on academic hold will require permission from the Dean's office to complete the registration process.
5. The student suspended for poor scholarship and subsequently readmitted will be required to:
 - a. Register for no more than 13 hours.
 - b. Maintain no less than a 2.0 (C) average each semester following his/her readmission.
 - c. Reduce the deficit by no less than six (6) quality points each two semesters.
6. Gains made as a result of repeating a class to replace grades (D & F repeat rule) are included in achieving a 2.0 (C) grade average.

ACADEMIC DISMISSAL

1. Failure to make academic progress in relation to the criteria in #5 above will result in dismissal from the Community College.
2. Dismissal will be regarded as permanent. However, a student may request consideration for readmission after one calendar year. The student will be required to provide the Academic Appeals Committee with reasons why he/she should be readmitted to the Community College. The student must make the request in writing, and he/she will have the option of a personal appearance before the Committee at the time of the hearing.
3. Action of this committee may be appealed to the Office of The Dean.

CREDIT FOR NON-COLLEGIATE LEARNING

The faculty at the Community College think that WHAT a person knows is more important than how it was learned. If a student can demonstrate or document knowledge and skills reasonably comparable to Community College courses, equal credit may be awarded.

APPENDIX B (continued)

The student who has already been accepted by the Community College has several options, as listed below. The student should meet with his/her advisor regarding these options.

1. Credit by Examination

Credit by examination is available for certain courses. The awarding of credit is based upon the evaluation of specific criteria established by appropriate faculty. Proficiency examinations for credit will be given at a stated time before the end of the schedule adjustment period each semester or at a time designated by appropriate faculty.

Part-time students will be required to pay a \$30 fee for each exam attempted. No extra fees will be charged to full-time students.

See also the College Level Examination Program and Advanced Placement Examination.

2. Credit Via Accepted Standards

Courses taught by the United States Armed Forces and certain other government agencies, companies, and organizations are sometimes reasonably comparable to Community College courses. To be considered, the courses must be listed in the latest edition of one of the approved credit-equivalency references.

There will be a \$100 fee for the faculty evaluation of the student's evidence of knowledge or skills, regardless of the number of credit hours awarded.

See also Credit for Military Experience and Training.

3. Credit for Knowledge or Skills

Credit for knowledge or skills is available only to students who have graduated from high school at least four years ago. For those passing a high school equivalency test, credit for knowledge or skills is not available until at least four years after their class graduated from high school.

The student must provide evidence of possessing college equivalent knowledge or skills. The knowledge or skills must be reasonably comparable to the knowledge or skills demonstrated by Community College students. Credits earned via this option are called college equivalent credits. These credits will be placed on the student's permanent record when all other requirements for the Associate Degree have been fulfilled.

There will be a \$100 fee for the faculty evaluation of the student's evidence of knowledge or skills, regardless of the number of credit hours awarded.

See also Regents Bachelor of Arts Degree.

APPENDIX C

ENGINEERING TECHNOLOGY

POSITION DESCRIPTION

Nature of the Work

Engineering technicians use the principles and theories of science, engineering, and mathematics to solve problems in research and development, manufacturing, sales, and customer service. Their jobs are more limited in scope and more practically oriented than those of scientists and engineers. Many engineering technicians assist engineers and scientists, especially in research and development. Some technicians work on their own, servicing equipment at customers' worksites. Others work in production or inspection jobs.

Engineering technicians who work in research and development build or set up equipment, prepare experiments, calculate or record the results, and assist engineers in other ways. Some make prototype versions of newly designed equipment. They also assist in routine design work, often using computer-aided design equipment.

Engineering technicians who work in manufacturing follow the general directions of engineers. They may prepare specifications for materials, devise and run tests to ensure product quality, or study ways to improve manufacturing efficiency. They may also supervise production workers to make sure they follow prescribed procedures.

Engineering technicians also work as field representatives of manufacturers, wholesalers, or retailers. They help customers install, operate, and maintain complex technical equipment, and may write repair or operating manuals.

Occupational Outlook Handbook (p. 206).

APPENDIX C

ENGINEERING TECHNOLOGY

Course Descriptions

- BUS 201 HUMAN RELATIONS IN BUSINESS. 3 credit hours
- Human interpersonal relations in business organizations, emphasizing personal/interpersonal attitudes, employment selection, job satisfaction, techniques of applying for and retaining employment, and personal qualities essential for business success.
- CHM 203 GENERAL CHEMISTRY I. 3 credit hours
- An introduction to chemical science, its development, basic concepts and interrelationships with other sciences. Intended primarily for non-science majors and B.A. degree candidates.
- CHM 213 IDENTIFICATION OF THE ELEMENTS 2 credit hours
- An introduction to the principles of experimentation and to laboratory techniques as applied to the qualitative analysis and identification of the chemical elements. One of the four courses (213, 214, 215, 216) which may be selected to meet the two course laboratory requirement for introductory chemistry.
- COM 111 COMMUNICATIONS I. 3 credit hours
- Designed to improve the student's writing, listening, and oral communication skills. Correlates the study of communication to the degree area. (PR: Permission)
- COM 132 TECHNICAL COMMUNICATIONS II. 3 credit hours
- Process of transferring a message within the technical framework. Reading, analysis and construction of common technical communication types using basic principles and requirements of the oral and written communication processes. - (Pr: COM 111 or Permission)
- COM 231 TECHNICAL REPORT WRITING. 3 credit hours
- Study of the preparation of technical reports. Emphasis on good writing principles and the use of supplementary illustrations as they apply to technical reports. Review of mechanical features is given as warranted.

CT 103 FUNDAMENTALS OF COMPUTER TECHNOLOGY 3 credit hours

An introductory computer literacy course designed to help the student understand the terminology, application, processes, and effects of data processing and the environment in which it is used.

CT 210 INTRODUCTION TO ROBOTICS 3 credit hours

An introduction to robotic components, systems, and manufacturing techniques to include control and sensory systems. (PR: CT 103/CR: CT 270 or permission)

CT 220 CAD FOR TECHNICIANS 3 credit hours

An introductory course designed to familiarize technicians with computer aided drafting (CAD) hardware and software. Review of applications and systems management. (PR: CT 103 or permission)

CT 277 FLEXIBLE MANUFACTURING SYSTEMS 3 credit hours

Course purpose is to introduce the student to basic knowledge and application skills dealing with the FMS environment to include the integration of CAD, robotics, and CNC machining operations.

EG 101 ENGINEERING GRAPHICS 3 credit hours

Orthographic projection; conventional representations and sections. Introduction to descriptive geometry. Introduction to computer-aided graphics.

* DETAILING AND DIMENSIONING 3 credit hours

Standard methods of detailing and dimensioning of drawings using computer aided drawing methods.

* ADVANCED 2D AND 3D CAD 3 credit hours

Continuation of 2D CAD features such as menu's, programming languages, macros, and customization of software packages to suit specific needs. An introduction to 3D CAD using various hardware and software platforms.

* GRAPHIC SIMULATION AND MODELING 3 credit hours

An expansion of 3D CAD using various hardware and software to include simulation and modeling of factory and office systems.

* SPECIALITY CAD SOFTWARE 3 credit hours

Introduction to a variety of speciality CAD software, which may include but is not limited to these fields: electrical/electronics, architecture, hydraulics and pneumatics, and so forth. Student project.

* INTERNSHIP/COOP 3 credit hours

ISM 116 MANUFACTURING PROCESSES 3 credit hours

Survey of manufacturing processes, machines, tools, and devices with regard to their capabilities, capacities, tolerances, finishes, etc. Product design, materials utilized and nomenclature.

ISM 231 INDUSTRIAL MATERIALS, PROCESSES, AND FLOW 3 cr. hours

Current information about materials and their manufacturing processes and flow, relation of substituted materials to process, problems involved in material use.

ISM 233 QUALITY CONTROL 3 credit hours

Principles and methods in modern statistical quality control, control charts, acceptance sampling, natural process dispersion, other modern methods and techniques.

ISM 234 OPERATION PLANNING AND SCHEDULING 3 credit hours

Procedures and techniques in scheduling, manpower planning, and utilization. Control of production flow from raw material receipt to product shipment.

ISM 237 PRODUCTION AND INVENTORY CONTROL 3 credit hours

Modern methods of advanced planning and forecasting techniques and control; routing with breakeven analysis of alternatives; mathematical loading and scheduling, using index and linear programming methods.

MAT 145 TECHNICAL MATHEMATICS I. 3 credit hours

Basic mathematical topics needed by technicians: signed numbers, operations with fractions, non-fractional and fractional equations, graphing, formula derivation, number system, powers of ten, estimation, scientific calculator concepts, and geometric formulas. (NOTE: Students are placed in this course on the basis of performance on the mathematics placement test)

MAT 146 TECHNICAL MATHEMATICS II. 3 credit hours

Continuation to Technical Mathematics I. Covers intermediate topics needed by technicians, including systems to three equations, quadratic equations, variations, introductory geometry, triangles, the circle, geometric solids and introductory trigonometry. (PR: MAT 145 or Permission)

MTH 140 APPLIED CALCULUS 3 credit hours

A brief survey of calculus including both differentiation and integration with applications. Not to be substituted for Mathematics 131 or Mathematics 190. (PR: Two years of high school algebra and at least 20 on ACT, or Mathematics 120 or equivalent)

*New Courses

AGENDA FOR ACTION 1985-1990

established, should help maximize the quality and service within limited resources.

West Virginia University - West Virginia University is considering the following doctoral degree programs for study in the planning period: Agricultural Sciences; Biotechnology; Business Administration; Information Systems; Material Sciences; Mathematics; Computer Assisted Design and Manufacturing; and Sports Medicine.

Currently, West Virginia University is proposing the following new degree programs: Computer Engineering (B.S.); Computer Science (Ph.D.); and Mineral Engineering (Ph.D.). If approved, implementation would occur during the planning period.

Marshall University - Proposed associate degree programs are: Engineering Technologies (AAS); Emergency Medical Technology (AAS); Radiograph Medical Technology (AAS); Respiratory Therapy Technology (AAS); Medical Assistant (AAS); Medical Records Technology (AAS); and Physical Therapy Assistant (AAS).

Proposed baccalaureate degree programs include: Business Information Systems (BBA); Adult Education (BA); and Safety Education (Mine Safety) (BA). Marshall will propose a conversion of existing approved 2+2 program in Nursing (ASN and BSN) to a four-year baccalaureate (generic) degree program.

Proposed masters degree programs are: Recreation Geography (MA/MS); Economics (MA); Community College Education (MA); Athletic Administration and Sports Management (MS); Mathematics Education (MA); Management/Labor Relations (MS); Computer and Information Science (MS); Park Resource and Leisure Services (MS); Adult Fitness/Cardiac Rehabilitation (MS); Geology (MS); and Fine Arts (Music, Theatre, Visual Arts) (MFA). In addition, an intermediate graduate program of Performer's Certificate in Applied Music will be proposed.

The following doctoral programs will be studied as possible stand-alone programs, and proposed when funding needs of existing programs have been met. In each case, programs will be developed only after thorough exploration of cost, need and potential. These include: Biological Science (Ph.D.); Chemistry (Ph.D.); Clinical Psychology (Psy.D.); Occupational Safety and Health (Ed.D.); Doctor of Arts in Teaching (Science & Math); and Vocational Education (Ed.D.).

West Virginia College of Graduate Studies - Master's programs to be investigated include: Master Teacher; Special Education Administration; and Criminal Justice Administration.

Bluefield State College - Certificate and Associate degree program for possible consideration include: Respiratory Therapy Technology (CP); and Natural Science (AAS). In addition, there may be a need for a satellite program in Nursing (AS).

Baccalaureate programs needing further consideration include: Accounting (B.S.); Computer Science (B.S.); Computer Service Technology (B.S.); Mechanical Engineering Technology (B.S.); Nursing (B.S.); and Interdisciplinary Studies (B.S.).

ENGINEERING TECHNOLOGY
Core Curriculum

FIRST SEMESTER

COM 111	Communications I	3
CT 103	Intro to Computer Technology	3
EG 101	Engineering Graphics	2
ISM 132	Human Relations and Work	3
MAT 145	Tech Math I	3
SES 101	Keyboarding	2
		<u>16</u>

SECOND SEMESTER

CIS 203	Computer Science and Fortran Programming	3
COM 132	Technical Communications	3
CT 220	Computer Assisted Drafting-Tech	3
ISM 240	Industrial Economics	3
MAT 146	Tech Math II	3
Specialization		3
		<u>18</u>

THIRD SEMESTER

COM 231	Technical Report Writing	3
MAT 205	Tech Math III	3
PHY 200	Intro Physics	3
PHY 200L	Intro Physics Laboratory	1
Specialization		9
		<u>19</u>

FOURTH SEMESTER

CHM 200	Intro Chemistry	3
CHM 200L	Intro Chemistry Laboratory	1
CT 281	Intro Robotics	3
MTH 140	Applied Calculus	3
Specialization		6
		<u>16</u>

SPECIALIZATIONS TO BE CONSIDERED: (Preliminary List)

- Manufacturing Technology
 - Computer Integrated Manufacturing (CIM)
 - Computer Assisted Drafting (CAD) and Robotics
- Civil Technology
- Electrical Technology
- Mechanical Technology
- Energy Technology

Sub-Total Core Curriculum 51

Sub-Total Specializations 18

TOTAL 69

APPENDIX D (Continued)
WEST VIRGINIA BOARD OF REGENTS

950 KANAWHA BOULEVARD, EAST
CHARLESTON, WEST VIRGINIA 25301

TELEPHONE 304 348-2101

December 16, 1987

*cc: V.R. Smith
Bob Maddox
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12/23
bn*
Thomas W. Cole, Jr.
Chancellor

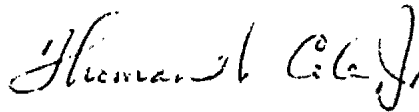
Dr. Dale F. Nitzschke
President
Marshall University
Huntington, West Virginia 25701

Dear Dr. Nitzschke:

At its meeting December 8, 1987, The Board of Regents reviewed the proposal of Marshall University to plan an Associate of Science program in Engineering Technology.

The Board has no objections to your development of this proposal consistent with the requirements of Administrative Bulletin No. 23. It appears that the proposal is consistent with the Flexible Manufacturing project and the Research Corporation goals.

Sincerely,



Thomas W. Cole, Jr.
Chancellor

TWC:nd

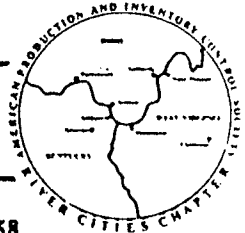
cc: Dr. David R. Powers

*see Dr. Nitzschke
12/16/87*

APICS

— AMERICAN PRODUCTION & INVENTORY CONTROL SOCIETY —

River Cities Chapter No. 293



P. O. Box 1958
Huntington, West Virginia 25720

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ARMCO
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1-606-329-7492

Executive Vice-President
Calvin Burnett
ARMCO
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1-606-329-7377

Vice-President Membership
Anthony Arozarena
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Treasurer
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Secretary
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Newsletter Editor
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Director
John Thompson
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South Point, OH 45680
1-614-377-2765

November 1, 1988

Mr. Randall Jones, Chair
Applied Science Technology
Marshall University Community College
Huntington, WV 25701

Dear Mr. Jones:

This past winter, the Board of Directors of the River Cities Chapter of the American Production and Inventory Control Society (APICS) agreed to serve as the ad hoc program advisory committee to help develop your Engineering Technology program. The APICS Board represents a broad base of regional industry including Inco, Armco, CSX, and South Point Ethanol.

We have discussed the program at many Board meetings with Community College Dean David Wilkin. At our Board meeting today, we reviewed the program proposal. We think that this will be an excellent program to help both students and industry. We are especially glad that the program incorporates curriculum important to APICS.

A motion was made, seconded and unanimously passed to approve and support the program. We look forward to providing additional advice as you implement the program.

Finally, APICS will continue to provide funds to Marshall's Library for APICS publications.

Sincerely,

Jeff Sawyers
Jeff Sawyers,
APICS Acting Secretary

APPENDIX D (Continued)

WEST VIRGINIA BOARD OF REGENTS

950 KANAWHA BOULEVARD, EAST
CHARLESTON, WEST VIRGINIA 25301

TELEPHONE 304 348-2101

December 16, 1987

*cc: V.P. Smith
Bob Maddox
T full*

Thomas W. Cole, Jr.
Chancellor

*12/23
bh*

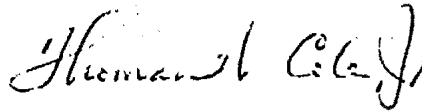
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President
Marshall University
Huntington, West Virginia 25701

Dear Dr. Nitzschke:

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The Board has no objections to your development of this proposal consistent with the requirements of Administrative Bulletin No. 23. It appears that the proposal is consistent with the Flexible Manufacturing project and the Research Corporation goals.

Sincerely,



Thomas W. Cole, Jr.
Chancellor

TWC:nd

cc: Dr. David R. Powers

*see Dr. Walker
12/17/87*



OFFICE OF THE ACADEMIC VICE PRESIDENT
Huntington, West Virginia 25701-5401
304/696-6690

MEMORANDUM

TO: David Wilkin, Dean

FROM: Carol Smith, Academic Vice-President *CS*

DATE: November 2, 1988

SUBJ: Engineering Technology Proposal

Thank you for the opportunity to review the Engineering Technology proposal.

For the record, I note Dean Hanrahan (College of Science), Dean Alexander (College of Business), and you have met with me a number of times since Fall 1986 regarding technical programs at Marshall. This Engineering Technology proposal corresponds to those discussions, and it corresponds to our Agenda for Action and the Letter of Intent. I note also your progress reports of February 1987 and May 1988. Sometimes our planning works!

It is clear to me that Marshall University can make an enormous contribution to regional industry with this Engineering Technology program. I am fully supportive of this program and I wish you success in implementing the program.

CS/ksj
cc: Dean Hanrahan
Dean Alexander

APPENDIX G

FIVE-YEAR PROJECTION OF PROGRAM SIZE

	First Year (FY90)	Second Year (FY91)	Third Year (FY92)	Fourth Year (FY93)	Fifth Year (FY94)
Number of students served through course offerings of the program:					
Headcount	<u>30</u>	<u>45</u>	<u>60</u>	<u>75</u>	<u>75</u>
FTE	<u>17</u>	<u>24</u>	<u>29</u>	<u>35</u>	<u>36</u>
Number of credit hours generated by courses within the program.					
	<u>376</u>	<u>530</u>	<u>640</u>	<u>783</u>	<u>823</u>
Number of credit hours generated by majors in the program.					
	<u>448</u>	<u>640</u>	<u>766</u>	<u>896</u>	<u>958</u>
Number of majors:					
Headcount	<u>15</u>	<u>25</u>	<u>35</u>	<u>40</u>	<u>40</u>
FTE Majors	<u>14</u>	<u>20</u>	<u>24</u>	<u>28</u>	<u>30</u>
Number of degrees to be granted annually.					
	<u>-0-</u>	<u>10</u>	<u>12</u>	<u>14</u>	<u>15</u>



MARSHALL UNIVERSITY

DIRECTOR OF UNIVERSITY LIBRARIES

HUNTINGTON, WEST VIRGINIA 25701

November 2, 1988

MEMO -

TO: . Randall Jones
Technology Coordinator, Community College

FROM: Josephine Fidler *JF*
Interim Library Director

SUBJ: Library Support for Proposed Program - Engineering Technology

Recent surveys by our Reference staff confirm that we can support the proposed program:

ENGINEERING TECHNOLOGY

Over the years we have responded to the acquisitions requests from the Community College relative to technology development. Consequently, we have excellent holdings in this area. In addition, we have sufficient periodicals in this discipline.

We feel that we can adequately support this program with the library's resources.

JF:ir

APPENDIX I

FIVE-YEAR PROJECTION OF OPERATING RESOURCES REQUIREMENTS

A. FTE POSITION	First Year (FY90)	Second Year (FY91)	Third Year (FY92)	Fourth Year (FY93)	Fifth Year (FY94)
1. Administrators	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
2. Faculty Members	<u>2(1)</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
3. Grad. Assistant	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4. Other Personnel					
a. Clerical	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
b. Part-time Instructors	<u>2</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>
TOTAL POSITIONS	<u>2FT</u> <u>2PT</u>	<u>2FT</u> <u>4PT</u>	<u>2FT</u> <u>4PT</u>	<u>2FT</u> <u>4PT</u>	<u>2FT</u> <u>4PT</u>

B. OPERATING COSTS (APPROPRIATED FUNDS ONLY)

1. Personal Services	<u>\$54,000</u>	<u>\$60,500(2)</u>	<u>\$63,130</u>	<u>\$65,890</u>	<u>\$68,780</u>
2. Current Expenses	<u>10,000</u>	<u>3,000</u>	<u>3,500</u>	<u>3,750</u>	<u>4,000</u>
3. Repair and Alteration	<u>2,500</u>	<u>3,000</u>	<u>3,500</u>	<u>3,750</u>	<u>4,000</u>
4. Equipment (Most equipment via grants, consignment, etc)	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>
TOTAL	<u>\$69,000</u>	<u>\$69,000</u>	<u>\$72,630</u>	<u>\$75,890</u>	<u>\$79,280</u>

C. SOURCES

1. General Fund Appropriations -3200-	<u>\$69,000</u>	<u>\$69,000</u>	<u>\$72,630</u>	<u>\$75,890</u>	<u>\$79,280</u>
2. Federal Government, grants, etc. (for equipment)	<u>\$35,000</u>	<u>\$35,000</u>	<u>\$35,000</u>	<u>\$35,000</u>	<u>\$35,000</u>
3. Private and Other (From contract instruction, seminars, etc, to be used for materials, supplies.)	<u>\$2,500</u>	<u>\$3,750</u>	<u>\$5,000</u>	<u>\$6,250</u>	<u>\$7,500</u>

(1) One Associate Professor at \$27,500; One Assistant Professor at \$22,500; Part-time at \$1,000/course.

(2) Assumed 5% increase/year for full-time faculty.

APPENDIX J

EXISTING LABORATORY EQUIPMENT
CAD / ROBOTICS / FMS

1. CAD

- (20) copies AutoCAD software purchased by state - upgrading to Version 10
- (19) PS2/Model 60s with coprocessors and 8212 displays
- (1) PS2/Model 80 with coprocessor and 8212 display
- (20) 1201 Summagraphic Digitizers
- (1) Houston Instruments DMP 51 plotter
- (1) HP Laser Printer
- (1) Epson 1000 printer
- (1) IBM 5210 printer

2. ROBOTICS

- (4) Rhino robots with controllers

3. FLEXIBLE MANUFACTURING SYSTEM

Emco Maier Work Cell

- (1) IBM PC
- (1) F1-CNC Milling Machine
- (1) Compact 5 CNC Lathe
- (1) Mitsubishi Movemaster Industrial pick and place robot
- (1) Emco Maier FMS PCI control system
- (1) Demo FMS software
- (1) Demo-Edit software
- (1) FMS Cam software

APPENDIX K

BIBLIOGRAPHY

1. Center for Education and Research with Industry (CERI), "Statewide Needs Assessment Survey of Manufacturers," Marshall University, Huntington, WV, 1988.
2. Parnell, Dale, The Neglected Majority, The Community College Press, Washington, D.C., 1985.
3. Technology Management Group, Establishing Programs to Meet Manufacturing Needs in the Huntington, WV Tri-State Area, Philadelphia/Pittsburgh, PA, 1988.
4. U.S. Dept. of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, 1988-89 Edition (Bulletin 2300), 1988.
5. West Virginia Board of Regents, Directory of Educational Opportunities in West Virginia, 1987-88, Charleston, WV, 1987.
6. West Virginia Dept. of Education, Occupational Planning Data Report for the State of West Virginia, Charleston, WV, 1988.

Recommendation #3

The motion was made, seconded and passed to delete SPH 245 Listening in order to correct an oversight when SPH 345 was proposed and accepted at a previous meeting.

Senate President:

Approved Rainey Duke Date 12/8/88

Disapproved _____ Date _____

University President:

Approved Don Fitzgerald Date 12/12/88

Disapproved _____ Date _____

Recommendation #4

The motion was made, seconded and passed to accept the recommendation of the Appeal Board report dated November 7, 1988 related to a student grade appeal.

Senate President:

Approved Rainey Duke Date 11/28/88

Disapproved _____ Date _____

University President:

Approved Don Fitzgerald Date 12/12/88

Disapproved _____ Date _____

Recommendation #5

The motion was made, seconded and passed to accept the recommendation of the Hearing Board to uphold the College of Education's requirement per Policy 5100 related to a student petition for waiver of 7 hours of credit requirement which they claim was not in the Catalog under which they entered Marshall.

Senate President:

Approved Rainey Duke Date 11/28/88

Disapproved _____ Date _____

University President:

Approved Don Fitzgerald Date 12/12/88

Disapproved _____ Date _____

Appeals
and
Questions
with
your
ombudsman
rather
than
pres. of
senior
class
of