



OAKLAND
COMMUNITY
COLLEGE

LANDSCAPE DESIGN NEEDS ASSESSMENT

Final Report

Requested by:

Chancellor's Council
and
College Curriculum Committee

Prepared by:

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**Oakland Community College
2000 Landscape Design Needs Assessment**

Executive Summary

- The program may become necessary if the state of Michigan requires that Landscape designers be licensed and meet state approved criteria in order to be considered a Landscape Designer.
- Currently, there is no apparent need for a program in Landscape Design. However, should there be a need for Landscape Designers to be licensed in the state of Michigan, OCC would be at the fore in training qualified Landscape Designers.
- The state of Michigan does not require Landscape Designers to have any formal design training. A survey of employers revealed that most employers prefer that new employees have either a Bachelor's degree (37%) or at least some college courses (20%). Approximately 10% of employers stated that the typical level of education for new hires is an Associate's degree.
- Because the proposed program is essentially a rearrangement of required courses within the Horticulture program, there are no apparent obstacles that exist in the development of the program.
- Student demand for the program appears to be higher than expected. In the Fall semester of 1999, there were 27 students enrolled in LST 151, *the History of Horticulture*. This is not a required course in the current Landscape Horticulture program. Therefore, students appear to be enrolling in the course because they are genuinely interested in this topic.
- Non-traditional students will find difficulty in scheduling day courses, while evening courses will be problematic in terms of any courses requiring outdoor fieldwork. Non-traditional students may have difficulty enrolling in courses requiring fieldwork during non-winter months, as most are believed to be already working in the landscaping field.
- Projections for the state of Michigan indicate that Landscape Architecture job openings will experience 18.9% growth, which is as fast as average. It is expected that there will be 20 annual Landscape Architecture openings in the state of Michigan through the year 2006. Employment prospects are unavailable for the job title "Landscape Designer," instead information about "Landscape Architects" was used because this occupation was closest in description to designers. Actual employment predictions may be different than indicated because of this handicap.
- According to the 1999 Michigan Occupational Information System, employment in Michigan is expected to grow as fast as the average (expected growth is 18.9%) through 2006. Currently, there are approximately 600 Landscape Architects employed in the state of Michigan. Projections indicate that there will be approximately 20 job openings per year for Landscape Architects. It is anticipated that ten of these openings will be due to growth in the field and ten will be due to replacement of workers who leave the industry. The state of Michigan conferred an average of 18 graduates per year from Landscape related programs from 1994 to 1998. Therefore, because an average of 20 new landscape openings are expected per year, the Landscape market in Michigan should be able to employ most recent graduates.

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- Metro Detroit Landscaping Companies were surveyed regarding job openings. Of those employers who had hired Landscape Designers within the past 12 months, 11 of those positions were due to the creation of new jobs while 4 were to replace workers who left the company. It should be stated that approximately 76% of the employers surveyed had not hired Landscape Designers within the past 12 months. This is in conflict with the projections made by MOIS data. However, this should be qualified by the fact that projects made by MOIS are for Landscape Architects, not for designers.
- In regard to continuing education, employers were more likely to be interested in attending seminars if they were short in duration and required less of a time commitment. 55% stated that they were either somewhat likely or highly likely to take workshops offered by OCC. This number increased to 81% when employers were asked how likely they were to take a one-day Landscaping workshop hosted by OCC.
- Oakland Community College is the only community college in Oakland, Wayne, Macomb and Washtenaw Counties that offers a Landscaping program. This suggests that OCC could capture the majority of potential students in Southeast Michigan who are interested in landscape design. Oakland Community College would be the only institution to offer "Landscape Design."
- Marshall Baekeroot, the designer of OCC's proposed program, has been in negotiation with Dr. Brandonberg, dean of Natural Sciences at Michigan State University, to create an articulation agreement between the two schools. How feasible this is in light of the fact that the proposed program is geared toward non-traditional students (35-50 year-olds) is subject to debate, as these students do not typically transfer to four-year institutions.

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ACADEMIC ISSUES

(1) DESCRIPTION OF THE PROPOSED PROGRAM.

Landscape Design Associate in Applied Science

This program, leading to an Associate Degree in Applied Science, gives the student experience in landscape gardening, ornamental horticulture, and plant health care, enabling the student to produce functional as well as aesthetically pleasing designs. An individual entering this field can find self-expression and satisfaction in a career that brings pleasure and beauty to outdoor spaces. A graduate may be employed in one of many landscape businesses, in the care of public and recreational grounds, nurseries, grounds of public and private institutions or may choose to start a business.

Degree Requirements

Major Requirements Credits

LST 111*	Introduction to Ornamental Horticulture	3 Credits
LST 112*	Plant Identification	3 Credits
LST 121*	Soil and Soil Fertility	3 Credits
LST 122*	Landscape Construction-Irrigation	3 Credits
or		
LST 123*	Landscape Construction-Hard Structures	3 Credits
LST 151*	History of Landscape Architecture	3 Credits
LST 228*	Landscape Illustration	3 Credits
LST 231*	Introduction to Landscape Planning	3 Credits
LST 234*	Insect, Pests, and Disease Identification	3 Credits
LST 140.3*	Field Project	3 Credits
LST 240.3*	Advanced Field Project	3 Credits
LST 237*	Plant Health Care	3 Credits
LST 244*	Landscape Perspectives	3 Credits
LST 248*	Computer Aided Landscape Design	3 Credits
ARC 211*	Architectural Site Development	3 Credits
ART 151*	Basic Drawing	3 Credits
or		
ART 152*	Basic Design	3 Credits
BIO 132*	Plant Science	3 Credits

Required Supportive Courses

SPE 129P	Interpersonal Communication	3 Credits
BIO 150P	Environmental Science	4 Credits
or		
GSC 153P	Introduction to Geology	4 Credits
or		
LSC 151P	Life Science	4 Credits
or		
CHE 132P	Survey of Organic and Biochemistry	4 Credits
LST 130	Greenhouse Management	3 Credits

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Suggested Electives

ACC 111	Fundamental Accounting	3 Credits
ACC 251	Principles of Accounting I	4 Credits
ATW 112	Introduction to Gas/Arc/MIG/TIG Welding	3 Credits
BUS 121	Starting and Operating a Small Business	3 Credits
BUS 131	Principles of Supervision	3 Credits
ENG 135P	Business Communications	3 Credits
ENG 221P	Business Writing	3 Credits
ENG 151P	Composition I	3 Credits
ENG 152P	Composition II	3 Credits
ART 151P	Basic Drawing	3 Credits
ART 152P	Basic Design	3 Credits
SPA 151P	Beginning Spanish I	4 Credits
SPA 101	Conversational Spanish I	2 Credits
LST 113	Woody Plant Identification II	3 Credits
LST 214	Garden Design and Maintenance	3 Credits

Necessary Electives to Total 62

Communication / English (3 credits required)

ENG 106 a, 145, 151, 152, 280 a, 282
FSC 150
SPE 129, 161, 261, 262 a

Fine Arts/Humanities (3 credits required)

a maximum of 8 credit hours will count toward the Fine Arts/Humanities General Education requirements

ARB 151, 153;
ART 151, 152, 153, 154, 155, 156, 157, 158, 160, 161, 165, 167
ENG 161, 171, 172, 251, 252, 253, 254, 265, 275, 280
ESL 101, 102, 141, 142, 151, 152, 241, 242, 251, 252;
FRE 151, 153
FSH 150
GER 151, 153
HIS 151 a, 152 a
HUM 151, 152, 171, 190, 272, 290
ITA 151, 153;
JPN 151, 153;
MUS 151, 152, 156, 157, 158, 159
PER 165.3 a, 165.4 a, 165.7 a, 165.8 a
PHI 151, 152, 161, 171
PHO 122
RUS 151, 153
SPA 151, 153
SPE 262 a
THE 156, 157, 158, 190

Mathematics/Science (3 credits required)

BIO 150*, 153*, 154*, 155*, 157
CHE 100*, 132*, 150*, 151*, 152*
FSN 150
GSC 153*, 154*, 158*, 162*
LSC 151*
MAT 114, 115, 150, 154, 156, 158, 160, 163, 171, 172, 253, 271
PHY 161*, 162*, 240*, 250*
PSC 156*

Physical Education (1 credit required)

EXL 205
PER 130, 159, 162, 164.2, 164.3, 165.3 a, 165.4 a, 165.5 a, 165.6 a, 165.7 a, 165.8 a, 168.1, 168.2, 173, 173.2, 174, 174.1, 174.2, 174.3, 174.4, 174.5, 174.6, 178.6, 179, 180.2, 180.3, 180.4, 182.2, 182.5, 183.1, 183.2, 183.8, 183.9, 184.1, 184.2, 184.3, 186.2, 188, 189, 192, 192.1, 193, 194.1, 194.2, 261

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Social Science (3 credits required)

ANT 152, 154, 251, 275
ECO 261, 262
FSS 150
GEO 151, 152
HIS 151 1, 152 1, 155, 170, 251, 252, 261, 262
POL 151 (required), 252, 253, 261
PSY 151, 251, 263, 271, 281
SSC 151, 152, 261, 271
SOC 251, 252, 253, 261

Written Communication (3 credits required)

ENG 106 1, 135, 145, 151, 152, 211, 221

* These courses satisfy the Natural Science Lab Science requirement and include a lab fee.

1 History 151 and 152 may apply for either Social Science or Humanities but not both.

2 This course will apply toward Fine Arts / Humanities and/ or Physical Education.

3 This course will apply toward Communication/ English or Humanities, but not both.

4 This course will apply toward Communication/ English or Written Communication, but not both.

† General Education courses listed as Required Supportive and Suggested Electives may be used to meet requirements of the General Education Component.

* When all the courses marked with an asterisk are completed, the student may apply for a Certificate.

Please see Appendix "A" for individual course descriptions.

(2) FOR WHOM IS THE PROGRAM PRIMARILY DESIGNED? (E.G. NEW STUDENTS, EXISTING STUDENTS SEASONED PROFESSIONALS)

- The program is primarily designed for non-traditional students who have already had experience in the industry or students who are returning to school to start a different career. The primary target market for the program has been identified as men and women ages 35-50. This is slightly older than the average age of Landscape Technology students on their day of graduation (average age was 35.5 years old).
- In addition, the program is also designed for students who are already employed in the field. Over 70% of Landscape Technology graduates already had jobs upon graduation. It is very possible that many Landscape Design students will also be employed while taking classes or before graduating.
- This program, although not specifically targeted towards the traditional 18-22 year old student, is certainly appropriate for this population.

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- This information suggests possible difficulties in scheduling classes. Non-traditional students will find difficulty in scheduling day courses, while evening courses will be problematic in terms of any courses requiring outdoor fieldwork. Non-traditional students may have difficulty enrolling in courses requiring fieldwork during non-winter months, as most are believed to be already working in the landscaping field.
- Also, there may be problems with offering both day and evening courses in terms of enrollment numbers, faculty availability, and associated costs.

(3) WHAT IS THE PRIMARY INTENT OF THE PROGRAM? (E.G. PREPARE FOR TRANSFER, PREPARE FOR ENTRY LEVEL EMPLOYMENT, ENHANCE EXISTING SKILLS, OBTAIN NEW SKILLS)

- The primary intent of the program is to enhance the existing skills of students who have landscaping experience and to teach them new skills. They may then use the knowledge they have gained at OCC to earn promotions or get better paying jobs.
- A secondary intent is to teach landscaping skills to those who have never had landscaping experience, such as those students who are starting new careers or traditional students who have not yet been in the workforce.

(4) WILL THE PROGRAM LEAD TOWARD A CERTIFICATE OR DEGREE?

- The proposed program would offer students who have completed all required criteria an associate's degree in "Landscape Design."

(5) WHAT ARE THE INTENDED COURSE DELIVERY FORMATS (E.G. LECTURE, LABORATORY, PRACTICE, ON-LINE, ETC.) FOR EACH COURSE?

- This program proposes to offer classes that will be taught in several different delivery formats.
- A majority of the courses (e.g., History of Landscape Architecture) will be taught in lecture format. Landscape instruction for classes such as Soil and Soil Fertility and Turf-grass Management will be taught using a hands-on approach both in and outside of the classroom.
- The Computer Aided Design course requires specific software and be held in a computer lab.

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- In addition, field practicum courses designed to give students practical experience in a landscape business/agency are being designed.

(6) WHAT ARE THE INTENDED STUDENT OUTCOMES FOR EACH COURSE?

LST 151: History of Landscape Architecture

Students will learn:

- The two and three dimensional form of community patterns based on philosophic concepts of ideal social, moral, political conditions for dwelling places of man.
- The concepts of Garden Cities as promulgated by Ebenezer Howard to improve 19th century housing and health and welfare.
- Examination of physical examples of communities designed and built on the basis of Howard's precepts.
- Comparison of recently built European New Towns with ideal city concepts and Howard's goals.
- Study of American New Towns and Planned Unit Developments as modifications of the ideals of the past.
- The nine areas of human activities that constitute the functions for which landscape architects must provide in urban settings.
- The origin and development over time of concept of relationships of three-dimensional objects in space, and their functions.
- The 20th century revolt against Victorian clutter

LST 228: Landscape Illustration

Students will demonstrate:

- Marker rendering techniques on a blueprinted landscape master plan
- Methods of using technical pens on master plans

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- Proper use of matte knife or exact-o knife for the purposes of cutting matte board borders and sheets
- Procedures for mounting and framing a landscape plan on matte board
- Framing techniques and covering procedure for mounting landscape plans
- Drawing transfers by various media used by landscape designers

LST 244: Landscape Perspectives

Students will:

- Demonstrate how to draw geometric shapes in perspective
- Demonstrate two different types of perspective drawings
- Demonstrate techniques used to illustrate plant material in perspective
- Demonstrate techniques used to illustrate landscape textures, such as pavement and building materials, in perspective
- Demonstrate techniques used to illustrate people in perspective in the landscape
- Use the information presented in class to render a landscape design in three-dimensional perspective.

LST 248: Computer Aided Landscape Design

Students will:

- Demonstrate computer start up and basic knowledge of the hardware components
- Demonstrate disk and program loading procedures
- Demonstrate computer shut down procedures
- Demonstrate how to access a program, save a document, and retrieve that document
- Experiment with the design program by solving design problems in residential situations

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- Demonstrate the design program by solving design problems in residential situations
- Demonstrate the design program by solving design problems in commercial situations
- Demonstrate cost estimation procedures on the computer
- Demonstrate work processing procedures on the computer
- Demonstrate various procedures for print out and creating hard copies of the cost estimate and landscape design

(7) WHAT ARE THE INTENDED STUDENT OUTCOMES FOR THE PROGRAM?

Upon completion of the Landscape Design program the students will have demonstrated proficiency in:

- Basic science related to Landscape Horticulture
- Development of skills necessary to complete in the Landscaping Design field
- Knowledge in small business administration
- Skill in writing communications
- Problems solving as related to Landscape Design
- Public speaking skills

ADMINISTRATIVE ISSUES

(1) RELATION BETWEEN THE PROPOSED PROGRAM AND THE COLLEGE'S MISSION AND PURPOSES.

- The proposed program will improve students' employability.
- It will provide students with learning opportunities in order to meet the needs of the landscaping industry.
- The program will provide students the opportunity to develop skills for career success.

(2) WHAT IS THE EXPECTED DURATION OF NEED FOR THE PROGRAM?

- Currently, there is no apparent need for a program in Landscape Design. However, should there be a need for Landscape Designers to be licensed in the state of Michigan, OCC would be at the fore in training qualified Landscape Designers.
- Projections for the state of Michigan indicate that Landscape Architecture job openings will experience 18.9% growth, which is as fast as average. It is expected that there will be 20 annual Landscape Architecture openings in the state of Michigan through the year 2006. Employment prospects are unavailable for the job title "Landscape Designer," instead information about "Landscape Architects" was used because this occupation was closest in description to designers. Actual employment predictions may be different than indicated because of this handicap.

(3) WHAT ARE THE INDICATORS FOR STUDENT/CUSTOMER DEMAND FOR THE PROGRAM?

- The target population of potential students for the proposed program has been identified as non-traditional students who have experience in the Landscaping field. However, when surveyed by OCC, 69% of business owners and managers stated that they would be highly unlikely to enroll in a 15-week course. In addition, 62% also stated that they would be highly unlikely to enroll in an 8-week course. Therefore, there appears to be little demand within this population for a Landscape Design program.

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- Student demand for the program appears to be higher than expected. In the Fall semester of 1999, there were 27 students enrolled in LST 151, *the History of Horticulture*. This is not a required course in the current Landscape Horticulture program. Therefore, students appear to be enrolling in the course because they are genuinely interested in this topic.

(4) WHAT IS THE ESTIMATED SIZE OF THE PROFESSIONAL CONTINUING EDUCATION MARKET FOR THIS PROGRAM?

- Sixty Metro Detroit Landscape businesses were surveyed concerning OCC's proposed Landscape Design program. Of those surveyed, 59% stated that they had attended continuing education workshops within the past 12 months. Many of these potential employers attended seminars conducted by hosts such as Michigan State University and the Michigan Nursery and Landscape Association.
- In addition, 55% stated that they were either somewhat likely or highly likely to take workshops offered by OCC. This number increased to 81% when employers were asked how likely they were to take a one-day Landscaping workshop hosted by OCC. Employers were more likely to be interested in attending seminars if they were short in duration and required less of a time commitment. Only 12% of employers stated that they would be interested in attending a 15-week course conducted by OCC. Landscapers preferred that workshops be held in the evenings. Many of them commented that the only time they would be able to attend courses or workshops is in the Winter. The Spring, Summer and Fall are busy seasons for Landscapers.

(5) WHAT IS THE SIZE OF EACH OF THESE MARKETS?

Please see question (4).

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(6) TO WHAT EXTENT ARE THERE SIMILAR PROGRAMS BEING OFFERED IN SOUTHEAST MICHIGAN? WILL OCC BE COMPETING FOR THE SAME STUDENTS?

There are five other colleges in Michigan that offer Associate's degree/Certificate programs in Landscaping.

- **Grand Rapids Community College**, in conjunction with **Michigan State University**, offers a "Landscape Management" program. Students have the option of earning a certificate from the Michigan State University Institute of Agricultural Technology and/or an Associates degree from Grand Rapids Community College. The certificate requires completion of 48 credit hours including an internship. The Associates degree requires 66 credit hours, including an internship. It is active; students are currently enrolled in this program and new students are being accepted.
- **Jackson Community College** had previously offered a "Landscape Architecture" program. The program is currently inactive; students are not currently enrolled in the program and new students are not being accepted. Landscape Architecture is scheduled to be deleted in 2001. The Landscape Architecture program was only offered to prisoners in the Jackson State Prison. The program is no longer active because JCC is no longer affiliated with the prison system. This program required more than one year but less than two years of study.
- **Kirtland Community College** offers a "Landscape Gardener" program. It is an active program; students are currently enrolled and new students are being accepted. Students must complete 32 credit hours to complete the program. It is not an Associate degreed program. A counselor at Kirtland stated that he does not encourage students to enter this program because it focuses on gardening skills. He reported that one does not need college education to work as a gardener.
- **Lansing Community College** offers a "Landscape Architecture" Associate Degree program. It is an active program; students are currently enrolled and new students are being accepted. Students must complete 70 credit hours to earn a degree. An internship is not required for completion of the program
- **Ferris State University** has an Associates degree program in "Ornamental Horticulture Technology". Students must complete 60 credit hours to earn a degree. The program requires students to complete an internship.

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- The above listed schools are located outside of Southeastern Michigan. Oakland Community College is the only community college in Oakland, Wayne, Macomb and Washtenaw Counties that offers a Landscaping program. This suggests that OCC could capture the majority of potential students in Southeast Michigan who are interested in landscaping.
- In addition, Oakland Community College would be the only institution to offer "Landscape Design". The most similar program is Lansing Community College's "Landscape Architecture". Lansing's program requires more design courses. OCC's program is proposed to focus more on botany and horticulture. However, both programs contain common requirements such as landscape construction and Computer design. Because of similarities in programs, OCC may be in competition for students with Lansing Community College for students. Those interested in architecture may be more likely to enroll in LCC while students interested in design with a botanical emphasis may be more likely to attend Oakland Community College, though they may choose to enroll at the college that is closest to where they live.

(7) HOW MANY STUDENTS ARE EXPECTED TO ENROLL IN THE PROGRAM OVER A FIVE-YEAR PERIOD?

- It is difficult to predict the number of students who will enroll in a "Landscape Design" program. One cannot base an enrollment prediction on the enrollment of students in similar programs at other Michigan colleges and universities because there are no other schools in this state offer "Landscape Design" programs. Enrollment information regarding general Landscape programs in the state of Michigan is contained in the following chart.

<u>Year</u>	<u># Students Enrolled (statewide)</u>
1997-98	216
1996-97	197
1995-96	278
1994-95	255
1993-94	271

As can be seen, there seems to be an overall downward trend in enrollment.

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(8) WHAT ARE THE ENROLLMENT AND DEGREE TRENDS AT OTHER INSTITUTIONS WITH SIMILAR PROGRAMS?

- The question above indicated the enrollment trend for the last five academic years. As noted, enrollment for the state of Michigan is down from five years ago. The following chart indicates the number of degrees conferred over the last four years:

<u>Year</u>	<u># degrees conferred (statewide)</u>
1997-98	13
1996-97	6
1995-96	36
1994-95	17

(9) TO WHAT EXTENT ARE THERE OPPORTUNITIES FOR PARTNERSHIPS, ALLIANCES, ARTICULATION AGREEMENTS WITH OTHER EDUCATIONAL INSTITUTIONS AS WELL AS BUSINESS?

- Larry Wright, president of the Metropolitan Detroit Landscape Association (MDLA) stated that his organization would be willing to be involved with the proposed "Landscape Design" program at OCC. He stated that his organization is interested in facilitating internship opportunities and scholarships.
- In addition, Marshall Baekeroot, the designer of OCC's proposed program, has been in negotiation with Dr. Brandonberg, dean of Natural Sciences at Michigan State University, to create an articulation agreement between the two schools. How feasible this is in light of the fact that the proposed program is geared toward non-traditional students (35-50 year-olds) is subject to debate, as these students do not typically transfer to four-year institutions.
- According to OCC's survey of Landscape businesses, 49% of businesses polled stated that they were interested in being a part of an internship program with OCC students. Additionally, 43% expressed interest in serving on an OCC committee to further develop this program. (note: names of these individuals can be obtained by contacting the Office of Institutional Research)

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(10) WHAT ARE THE ANNUAL COSTS ASSOCIATED WITH THE PROGRAM? (STAFFING, EQUIPMENT, PROFESSIONAL DEVELOPMENT, OPERATIONAL, ETC.)

- The annual costs for running this program are minimal because all required courses are currently being taught under the "Landscape Horticulture" curriculum and would continue to be taught regardless of whether the "Landscape Design" program is approved or not. Therefore, no additional monies are needed for to pay adjunct faculty for course instruction. Nor are additional operating funds needed for courses, or equipment used in courses because these expenses are also currently being covered by the "Landscape Horticulture" program.

(11) WHAT ARE THE START UP COSTS ASSOCIATED WITH THE PROGRAM? (E.G. EQUIPMENT, TRAINING, SPACE RENOVATION, ETC.)

- All required courses for the "Landscape Design" program are currently being offered under the current "Landscape Horticulture" program. Therefore, start-up costs for this program are virtually non-existent. All of the equipment, space, and instructors are in place. The program has been slated by Dean Bryant to receive the old computers that OCC is in the process of replacing. The old computers are said to be adequate for performing all tasks needed for courses, (i.e. running Computer Aided Design Software).
- Several other "hidden" costs that must be considered as start-up costs include marketing costs, i.e. advertising for the new program. Software upgrades, training for new software, additional hours for labs (electricity), and continuing education for adjunct faculty are among other costs that must be considered prior to start-up.

(12) WHAT IS THE CAPACITY AT EACH OCC CAMPUS TO OFFER COURSES IN THE PROGRAM? (SPACE, EQUIPMENT, ETC.)

- Most courses in Landscape Design are scheduled to be taught in the traditional lecture format requiring only a conventional classroom. Therefore, these classes can be taught on any of Oakland Community College's campuses. Courses such as "Computer Aided Landscape Design" require computers and software that may not be readily available at all campuses. In addition, some courses involve hands-on instruction using actual landscape grounds. Landscape grounds also may not be available on all campuses.

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(13) WHO WILL TEACH THE COURSES? (ADJUNCT AND/OR FULL-TIME FACULTY)

- All courses are currently being taught by adjunct faculty and will continue to be taught by adjunct faculty.

(14) WHAT ARE THE FUNDING SOURCES TO START UP THE PROGRAM? MAINTAIN THE PROGRAM? (GENERAL FUND, GRANT, ETC.)

- Again, there is no need for funding to start the program because all courses are currently being offered or will be offered in forthcoming semesters. General funds would be used to sustain the program.

(15) WHAT ARE THE APPROPRIATE BENCHMARKS TO GAUGE THE SUCCESS OF THE PROGRAM? (EXPECTED ENROLLMENT, TUITION AND FEES, COMPLETERS, ETC.)

- The appropriate gauge for success would be student satisfaction with the overall program and individual courses.
- As can be ascertained from questions (7) and (8) that many more students enroll in landscaping programs than actually complete the programs. Therefore, enrollment, tuition, or completion of program would not be appropriate gauges of success.

(16) HOW WILL THE PROGRAM BE MARKETED?

- The program will be marketed using a variety of medium.
- The primary target market has been identified as non-traditional students between the ages of 35-50 years old. Many of these potential students are already employed in the industry. To reach these students, articles and advertisements will be entered into landscaping trade magazines such as the Metropolitan Detroit Landscape Association's (MDLA) publication, *The Landsculptor*. The president of the MDLA has stated that he is willing to publish an article in the organization's magazine featuring OCC's new "Landscape Design" program.
- In addition, traditional students are also being targeted for this program. Faculty plan on traveling to high schools in the Metropolitan Detroit Area and speaking to students about OCC's Landscape Design program.

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- Other marketing strategies include faculty appearances on talk radio shows, articles in the "Gardening" section of the Detroit Free Press and advertising in the free publication "Michigan Gardeners". Faculty are also planning to implement a web page on OCC's web site for the Landscape Design program. These marketing approaches are designed to reach a variety of potential students including but not limited to the above described targeted populations.

(17) WHAT OBSTACLES EXIST IN DEVELOPING THE PROGRAM?

- Because the proposed program is essentially a rearrangement of required courses within the Horticulture program, there are no apparent obstacles that exist in the development of the program.

(18) WHAT ADVANTAGES DOES OCC HAVE IN DEVELOPING THE PROGRAM?

- Larry Wright, president of MDLA, stated that he anticipates that there will soon be formal criteria that Landscape Designers must meet to practice their craft in the state of Michigan. Currently, there are no certifications needed for one to design landscapes in this state. Should OCC decide to approve this program, they would already have established a credible program that would be capable of meeting state certification standards. It may take other area community colleges years to comply with certification criteria. Therefore, students interested in Landscape Design would be more likely to attend OCC because of their established program.
- To gain added credibility, OCC is in the process of exploring an articulation agreement with Michigan State University. OCC is currently in talks with Dr. Brandonberg, dean of Natural Sciences at MSU, concerning this matter. Affiliation with Michigan State University, a major agricultural educational institution, would be an advantage of this college.

OCCUPATIONAL ISSUES

(1) IN WHAT INDUSTRY OR INDUSTRIES ARE STUDENTS LIKELY TO WORK AFTER TAKING COURSES IN THE PROGRAM?

- Students may be employed in a variety of settings following successful completion of coursework. Possible employment venues include...
 - Governmental agencies at the state, county and municipal levels (e.g., the Department of Parks and Recreation)
 - Public/Private Institutions
 - Nurseries
 - Flower Shops
 - Private Businesses
 - Self-Employment

(2) WHAT ARE THE MID AND LONG RANGE FORECAST FOR THIS INDUSTRY?

- The following information was obtained using the 1998-1999 Occupational Outlook Handbook. The Occupational Outlook Handbook did not contain information specifically on "Landscape Designers." The following information pertains to the most similar occupation listed, "Landscape Architect." Because of this constraint, predictions on the employment market for "Landscape Designers" may differ.
- Nationally, employment of landscape architects is expected to increase faster than the average for all occupations through the year 2006 (an increase of 21%-35%). The level of new construction plays an important role in determining demand for landscape architects. Overall, anticipated growth in construction is expected to increase demand for landscape architectural services over the long run. However, opportunities will vary from year to year and by geographic region, depending on local economic conditions. During a recession, when real estate sales and construction slow down, landscape architects may face layoffs and greater competition for jobs. The need to replace landscape architects who retire or leave the labor force for other reasons is expected to produce nearly as many job openings as new openings stemming from job growth.

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- An increasing proportion of office and other commercial and industrial development will occur outside cities. These projects are typically located on larger sites with more surrounding land which needs to be designed, in contrast to urban development, which often includes little or no surrounding land. Also, as the cost of land rises, the importance of good site planning and landscape design grows. Increasingly, new development is contingent upon compliance with environmental regulations and land use zoning, spurring demand for landscape architects to help plan sites and integrate man-made structures with the natural environment in the least disruptive way.
- Increased development of open space into recreation areas, wildlife refuges, and parks will also require the skills of landscape architects. However, budget tightening in the Federal Government may restrict funding for such initiatives in the Forest Service and the National Park Service, agencies which traditionally employ many landscape architects.
- In addition to the work related to new development and construction, landscape architects are expected to be involved in historic preservation, land reclamation, and refurbishment of existing sites, although these activities are expected to account for only a small proportion of new jobs.
- New graduates can expect to face competition for jobs in the largest and most prestigious landscape architecture firms. The number of professional degrees awarded in landscape architecture has remained steady over the years, even during times of fluctuating demand due to economic conditions. Opportunities will be best for landscape architects who develop strong technical and communication skills and a knowledge of environmental codes and regulations. Those with additional training or experience in urban planning increase their opportunities for employment in landscape architecture firms that specialize in site planning as well as landscape design. Many employers prefer to hire entry-level landscape architects who have internship experience, which significantly reduces training time.

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(3) WHAT OCCUPATION OR OCCUPATIONS ARE STUDENTS LIKELY TO OBTAIN AFTER TAKING COURSES IN THE PROGRAM? OR WHEN THEY GRADUATE FROM THE PROGRAM?

- Students who graduate or complete courses in this program may qualify for positions as "Landscape Designers." According to Larry Wright, president of Metropolitan Detroit Landscape Association, the state of Michigan does not require designers to have any formal credentials such as a degree or license. Therefore, anyone can claim to be a "Landscape Designer". For this reason, several employers stated that they prefer their designers to have a certificate or degree. A certificate from the Landscape Design program may greatly increase one's chances of being hired, especially if the program includes internship opportunities. Most employers prefer that their new hires have practical, hands-on landscape experience because it cuts down on training time.
- However, many individuals (30% nationally) opt to be self-employed in the Landscape Design/Architecture field. This may be due in part to relatively low start up costs (not including CAD equipment, which may not be a necessity for some Landscape Designers). Because there are no formal criteria in the state of Michigan to become a Landscape Designer, individuals who have completed courses or have a degree/certificate may work as freelance Landscape Designers.
- Landscape Designers can be employed in a variety of different disciplines including retail sales, consulting and construction. Although "Landscape Designers" may perform a diverse range of tasks, those with "Landscape Design" experience may work in other occupations. Additional occupations in which someone with landscape design experience could be employed as follows:
 - Plant and Marketing Salesperson
 - Landscape Manager
 - Arborist
 - Nursery Manager
 - Groundskeeper
 - Turf-grass Manager
 - Landscape Construction Worker

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(4) WHAT SKILLS MUST STUDENTS LEARN WHILE IN THE PROGRAM IN ORDER TO GAIN EMPLOYMENT OR TO SUCCESSFULLY TRANSFER?

- Conversations with employers indicate that they prefer to hire Landscape Designers with internship or practical/hands-on experience. Students with such experience have already obtained many necessary landscaping skills. Possession of these skills cuts down on time and money that would be spent on training new employees. They also stated that it is very important that designers have horticulture knowledge in addition to being able to utilize design techniques. Employers voiced their frustration with the current pool of potential employees because they do not have the necessary knowledge of plants and soils to adequately perform job tasks.
- A survey of landscape employers revealed that the most important skills for landscape designers to have are...
 - Knowledge of Woody Plants
 - The Ability to Bid on Jobs
 - The Ability to Price Jobs
 - Planting Methods
 - Knowledge of Herbaceous Plants
 - Knowledge of Perennials
 - Knowledge of Common Names
 - Knowledge of Insects
 - Soil Reconstruction
- These skills should be weighed more heavily in the design of existing LST courses, while de-emphasizing the other skills (not listed).

(5) ARE THESE POSITIONS (POSITION) ENTRY LEVEL OR ARE THEY MORE ADVANCED?

- Students may either enter into entry or more advanced employment upon completion of the program. It depends on the level of experience that students possess. Those with no experience would be likely to be hired for an entry-level position. If the proposed Landscape Design program were to offer internships, this may increase a student's chance of entering the field in an advanced position. In addition, many landscape students already have prior landscaping experience before they enter the program. Again, increasing a student's chance of being hired for a more advanced and better paying job.

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(6) ARE THESE OCCUPATIONS EXPERIENCING GROWTH OR ARE JOB OPENINGS DUE TO REPLACEMENT?

- According to the 1999 Michigan Occupational Information System, employment in Michigan is expected to grow as fast as the average (expected growth is 18.9%) through 2006. Currently, there are approximately 600 Landscape Architects employed in the state of Michigan. Projections indicate that there will be approximately 20 job openings per year for Landscape Architects. It is anticipated that ten of these openings will be due to growth in the field and ten will be due to replacement of workers who leave the industry. The state of Michigan conferred an average of 18 graduates per year from Landscape related programs from 1994 to 1998. Therefore, because an average of 20 new landscape openings are expected per year, the Landscape market in Michigan should be able to employ most recent graduates.
- Metro Detroit Landscaping Companies were surveyed regarding job openings. Of those employers who had hired Landscape Designers within the past 12 months, 11 of those positions were due to the creation of new jobs while 4 were to replace workers who left the company. It should be stated that approximately 76% of the employers surveyed had not hired Landscape Designers within the past 12 months. This is in conflict with the projections made by MOIS data. However, this should be qualified by the fact that projects made by MOIS are for Landscape Architects, not for designers.

(7) WHAT IS THE EXPECTED ANNUAL SALARY FOR THESE OCCUPATIONS?

- Information about "Landscape Designers" is not available in the 1998-99 Occupational Outlook Handbook. The following information pertains to architects, not designers.
- Median annual earnings for all **architects**, including landscape architects, were about \$39,500 in 1996. The middle 50 percent earned between \$30,200 and \$53,900; 10 percent earned less than \$23,900; and 10 percent earned over \$65,800. In 1997, the average annual salary for all landscape architects in the Federal Government in non-supervisory, supervisory, and managerial positions was about \$53,300.
- Because many landscape architects work for small firms or are self-employed, benefits tend to be less generous than those provided to workers in large organizations.
- A survey of Metro Detroit Landscape employers revealed that the average starting salary for Landscape Designers was \$27,000. The starting salary for Landscape Designers with Associate's degrees was slightly lower, \$25,000.

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(8) WHAT ARE THE MINIMUM EDUCATION AND EXPERIENCE REQUIREMENTS OF EMPLOYERS?

- The state of Michigan does not require Landscape Designers to have any formal design training. A survey of employers revealed that most employers prefer that new employees have either a Bachelor's degree (37%) or at least some college courses (20%). Approximately 10% of employers stated that the typical level of education for new hires is an Associate's degree.
- Conversations with employers revealed that they sometimes prefer to hire employees with Associate's degrees because these candidates are sufficiently skilled but do not require as high of salaries as potential hires with Bachelor's degrees.

(9) TO WHAT EXTENT ARE THERE OPPORTUNITIES FOR ADVANCEMENT IN THE FIELD?

- Conversations with employers indicate that there is varying opportunities for advancement in the field. Room for advancement appears to depend on what aspect of landscape design individuals choose for their careers. Many students are already employed in the field before coming to OCC. By taking courses and perhaps getting an Associate's degree they are preparing themselves for promotions and better jobs. Others choose to start their own landscape business.
- Landscape Designers, however, do not have as much training and education as Landscape Architects. This limits how much they may advance in corporations that employ a large number of designers and architects. Typically, in these large companies, architects will hold higher level, better paying jobs.

(10) WHAT ARE THE NATIONAL, REGIONAL AND LOCAL JOB PROSPECTS?

- Nationally, the job prospects for Landscape Architects are expected to increase at a rate that is faster than the average through the year 2006. The anticipated expansion of employment opportunities is due to expected growth in the fields of construction and urban planning.
- Regions in which the weather is favorable to vegetation employ more Landscape Architects than regions where weather is cold or where it is difficult for plants to grow. Many Landscape Architects are concentrated in California, Florida and Texas.
- Job prospects in Michigan are only expected to grow as fast as the average through the year 2005. Many Landscape Architecture graduates migrate to other states where the employment outlook is more favorable.

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(11) WHAT ARE THE CHARACTERISTICS OF THE STUDENTS WHO ARE MOST LIKELY TO ENROLL IN THE PROGRAM?

- Students who entered the existing Landscape Technology Program at OCC generally have already been in the landscape field or have been attending community college to start a second career. Most students who graduated in this program already had a job before they graduated, consistent with the notion that many potential Landscape Design students currently work in the field.
- The average age of Landscape Technology graduates of Oakland Community College was 36 years old.
- Ninety-nine percent of Landscape Technology graduates were Caucasian, the proportion of White students was twelve percent greater than for all OCC graduates.
- Most Landscape Technology graduates are female (55%).

(12) HOW MANY STUDENTS ARE EXPECTED TO ENROLL IN THE PROGRAM OVER A FIVE YEAR PERIOD?

- According to the enrollment data found in question (7), there is an overall downward trend in enrollment. However, more careful inspection reveals that, while enrollment seems to be on the decline in the Landscaping field, there are fluctuations. The following table below shows the increase and decrease in overall enrollment for Michigan schools for five years:

<u>Year</u>	<u>Enrollment</u>	<u>Increase/Decrease</u>
1997-98	216	+19
1996-97	197	-81
1995-96	278	+23
1994-95	255	-16
1993-94	271	---

- Estimates of enrollment for Landscape Design may fluctuate as well. As noted earlier, many students do not actually complete the program, or enroll continuously. This will make predictions problematic. However, if enrollment in LST 151 (27 students in Winter 2000) is an indication, then expected enrollment may be quite high relative to conservative expectations (ACS data indicate that there were 13 LST students enrolled in 1998-99). Whether these numbers remain stable due to continuous enrollment by the same students or by replacement cannot be determined.

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(13) WHY IS THE PROGRAM NEEDED?

- The program may become necessary if the state of Michigan requires that Landscape designers be licensed and meet state approved criteria in order to be considered a Landscape Designer. However, at this point, there does not seem to be a demand for Landscape Designers with associate degrees, or any degree, as there are no requirements mandated by the state to be a landscape designer.
- Employers, according to the OCC Business Survey, prefer someone with a college background, however, a degree was not considered necessary.

APPENDIX: A

Course Descriptions LANDSCAPE DESIGN

LST 111 3 Credits

Introduction to Ornamental Horticulture

Course provides an introduction to plant form and function. The basic plant parts of leaf, stem, root and flowers are stressed. Emphasis is placed on functions of transpiration, reproduction, transport and growth; techniques of pruning vegetative reproduction; fruit tree training; rose care and the value and use of mulches.

Course/lab fees.

LST 112 3 Credits

Plant Identification

Using both botanical and common names, 150 woody ornamental plants commonly used in landscaping, their uses and culture will be identified.

LST 113 3 Credits

Woody Plant Identification II

Prerequisite: LST 112.

This course is a continuation of LST 112. Using both botanical and common names, the student will study an additional 150 woody ornamental plants commonly found in the landscape. Plant uses and culture will be stressed.

Course/lab fees.

LST 114 3 Credits

Flowering Annuals and Perennials

The student will study 80 flowering annuals and perennials common to landscaping using both botanical and common names. Their uses and culture will be discussed.

Course/lab fees.

LST 115 3 Credits

Plants for Interior Landscapes

The students will identify and learn the characteristics of and the site requirements for 120 woody, herbaceous, interior plants. They will learn their common and scientific names.

LST 121 3 Credits

Soil and Soil Fertility

Course describes the formation of soils and mixes, compares and evaluates tillage methods and explores elements used by plants in their growth and development.

Course/lab fees.

LST 122 3 Credits

Landscape Construction – Irrigation

Course provides the student with knowledge necessary to develop an irrigation system for a home property, indicate the equipment used in the system and the principles of hydraulics utilized. Leveling instruments are used.

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LST 123 3 Credits.

Landscape Construction - Hard Structures

Prerequisite: LST 121 or consent of instructor.

Students will learn the techniques and use of materials for construction and installing various landscape features such as walls, walkways, wooden structures and water features. Pricing and bidding techniques are discussed.

Course/lab fees

LST 130 3 Credits

Greenhouse Management

This course is an introduction to greenhouse operations and management principles. Included are principles, techniques, methods and materials used by commercial horticulturalists in the production of plant material.

Course/lab fees.

LST 140.3 3 Credits

Field Project

This course is designed to give the student employment as a trainee in a business concern or other appropriate landscape technology agency.

LST 151 3 Credits

History of Landscape Architecture

Students will study the theories and concepts that have shaped urban landscape development from the time of the first cities to the present. Students will study the planning of such distinguished planners as Olmsted, Howard, Wright, Jefferson, Burnham, and others.

Course/lab fees.

LST 201 3 Credits

Turfgrass Management

Prerequisite: LST 121.

This course deals with collecting, identifying and controlling the common weeds of turf and garden. Various weed control methods and aspects of turf establishment and care are identified.

Course/lab fees.

LST 214 3 Credits

Garden Design and Maintenance

Prerequisites: LST 114 or consent of instructor. Students will study and practice garden design techniques

for five frequently encountered site types. Residential, commercial, and public gardens are included. Various design presentation styles will be covered. Plants, planting methods, and maintenance for each type of site will be discussed.

Course/lab fees.

LST 221 3 Credits

Nursery Practices

Prerequisites: LST 111, LST 112.

The aspects of one segment of the nursery industry will be described in a comprehensive term paper. An extended field trip is recommended to acquaint the student with various types of nurseries and their internal operations.

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LST 228 3 Credits

Landscape Illustration

This course introduces the student to formal landscape design presentation techniques. Both plan and perspective graphics will be addressed. Presentations will be made with multi-media: ink, watercolor, marker, and pencil.

Course/lab fees.

LST 231 3 Credits

Introduction to Landscape Planning

Prerequisites: LST 111, 112, 121, or consent of instructor.

Course enables the student to plan landscape designs for residential properties, using the basic principles of landscape architecture.

LST 232 3 Credits

Advanced Landscape Planning

This course will enable the student to design large properties with special emphasis on ornamental plants

and environmental considerations.

LST 234 3 Credits

Insect Pests and Disease Control

Prerequisites: LST 111, LST 112.

Course covers principles of insect and disease identification as well as acceptable control measures commonly used in turfs and ornamental plants.

Course/lab fees.

LST 237 3 Credits

Plant Health Care

Prerequisite: LST 234.

This course is designed to give the student an opportunity to develop an understanding of pest control. Instruction will stress pesticides and growth regulating chemicals including chemical nature and formulations, toxicity, application techniques, and environmental hazards. The course will also include pest control alternatives in integrated pest management programs, vocabulary relating to pest

management and

state licensing requirements.

Course/lab fees.

LST 240 4 Credits

Arboriculture

Prerequisites: LST 111, LST 112, LST 121, LST 234, or consent of instructor.

The student will learn the principles and techniques of plant selection, establishment, diagnosis of disorders

and cultural practices used in the maintenance of woody perennials commonly found in the urban landscape.

LST 240.3 3 Credits

Advanced Field Project

Prerequisite or corequisite: LST 140.3.

This course is designed to give the student further work as a trainee in a business concern or other appropriate

agency in the landscape technology field.

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LST 244 3 Credits

Landscape Perspectives

Prerequisite: LST 231.

This course offers the student techniques used for illustrating landscapes in three-dimension using the drawing board and landscape models. Landscape features including plant material, hard structures, land elevations, and building materials will be covered.

Course/lab fees.

LST 248 3 Credits

Computer Aided Landscape Design

Prerequisites: LST 231 and LST 232.

This course offers the student the opportunity to design with today's technology. Students will use various computer applications to design residential and commercial landscapes, including cost estimation, development of three-dimensional perspectives, and the production of color prints for presentation purposes. Course/lab fees.

ARC 211.....3 Credits

Architectural Site Development

Prerequisite: ARC 100

The student will display working knowledge of the basic principals and methods of site development. Specific topics include terminology, measurement procedures, grade establishment, topographical analysis, micro-climate analysis, continued drawing skill development, and basic computations involved in site development, and basic computations involved in site development.

Course/lab fees.

ART 151.....3 Credits

Basic Drawing

The student will demonstrate the use of various drawing techniques including contour drawings, continuous lines, shadow-mass impressions, and expressive line quality. The student will identify and analyze the structure of form and render a drawing on the basis of these observations.

Course/lab fees.

ART 152.....3 Credits

Basic Design

The student will develop skills that are fundamental in understanding design in two- and three-dimensional aspects. The student will be assigned various problems where the specific use of media and its objectives are outlined, viewed from its functional and aesthetic importance.

Course/lab fees.

BIO 132.....3 Credits

Plant Science

The student will describe and discuss the basic principals of vascular plant morphology, physiology, pathology, and ecology as they relate to agricultural landscape technology by (a) identifying and describing plant structures; (b) describing fundamental plant functions; (c) identifying and describing fungi, bacteria, viruses, and insects which are responsible for common plant diseases; and (d) by describing the natural habits of selected vascular plants.