

4-18-1999

## Curriculum of the Dubuque Community School District in Relation to Industrial Technology Programs in the State of Iowa

Boyd A. Card  
*University of Northern Iowa*

*Let us know how access to this document benefits you*

Copyright ©1999 Boyd A. Card

Follow this and additional works at: <https://scholarworks.uni.edu/grp>

---

### Recommended Citation

Card, Boyd A., "Curriculum of the Dubuque Community School District in Relation to Industrial Technology Programs in the State of Iowa" (1999). *Graduate Research Papers*. 3615.

<https://scholarworks.uni.edu/grp/3615>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

**Offensive Materials Statement:** Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

---

## Curriculum of the Dubuque Community School District in Relation to Industrial Technology Programs in the State of Iowa

### Abstract

This study was conducted to draw a comparison between the Industrial Technology course offerings available in Iowa high schools and those offered in the Dubuque Community School District (DCSD). The top twenty largest school districts grades nine to twelve in Iowa will be selected for this study. The survey will be in table format and sent to Industrial Technology teachers.

CURRICULUM OF THE DUBUQUE COMMUNITY SCHOOL DISTRICT  
IN RELATION TO INDUSTRIAL TECHNOLOGY PROGRAMS  
IN THE STATE OF IOWA

A Research Proposal for Presentation  
to the Graduate Faculty of  
the Department of Industrial Technology  
University of Northern Iowa

Submitted in Partial Fulfillment for  
the Non-Thesis Masters of Arts Degree

By

Boyd A. Card

April 18, 1999

Approved by

\_\_\_\_\_  
(Name) / Advisor

\_\_\_\_\_  
(Name) Graduate Faculty

April 21, 1999  
Date

4/21/99  
Date

## Table Contents

CHAPTER I. INTRODUCTION .....	1
Statement of the Problem .....	1
Significance of Study .....	1
Assumptions of the Study .....	2
Delimitations of the Study .....	3
Questions to be Answered .....	3
CHAPTER II. REVIEW OF RELATED LITERATURE .....	4
CHAPTER III. METHOD .....	9
CHAPTER IV FINDING .....	10
Offerings and Grade Level of Offering .....	10
Automotive .....	10
Wood / Construction .....	11
Metals & Welding .....	12
Machining .....	13
Drafting .....	14
Communication .....	14
Assorted .....	15
Course Offering Length .....	16
Automotive .....	17
Wood / Construction .....	17
Drafting .....	18

Electricity .....	18
Metals & Welding .....	19
Machining .....	19
Communication .....	20
Assorted .....	20
<b>Number of Course Offerings &amp; Number of Sections .....</b>	<b>21</b>
Automotive .....	21
Wood / Construction .....	21
Drafting .....	22
Electricity .....	22
Metals & Welding .....	23
Machining .....	23
Communication .....	24
Principles of Technology .....	24
<b>Number of Students Per Class .....</b>	<b>25</b>
Automotive .....	25
Wood / Construction .....	26
Electricity .....	27
Drafting .....	27
Machining .....	28
Metals & Welding .....	29
Communication .....	29
Assorted .....	30
<b>Number of Instructors per School .....</b>	<b>30</b>

CHAPTER V CONCLUSIONS .....	31
CHAPTER VI RECOMMENDATIONS .....	32
REFERENCES .....	33
APPENDIX A: Letter of Introduction for Survey .....	35
APPENDIX B: Industrial Technology Survey .....	37

## CHAPTER I

### INTRODUCTION

Industrial Technology programs in many educational institutions have come under considerable scrutiny regarding course offerings for high school students. The Goals 2000, Tech Prep, and School to Work initiatives are only a few of the new focuses in the ever changing arena of Industrial Technology (Cantor, 1997). This has been an ongoing scenario in education since the inception of Manual Arts (Foster, 1994) which has been considered the origin of today's Industrial Technology programs (Dugger, 1985). Industrial Technology programs today are the result of ongoing evolutionary changes in school curriculum (Volk, 1996). Because of these evolutionary changes, there has been the ever-pressing need to review course offerings of the Industrial Technology programs in today's schools to keep curriculum current (O'Riley, 1996).

#### Statement of the Problem

This study was conducted to draw a comparison between the Industrial Technology course offerings available in Iowa high schools and those offered in the Dubuque Community School District (DCSD). The top twenty largest school districts grades nine to twelve in Iowa will be selected for this study. The survey will be in table format and sent to Industrial Technology teachers.

#### Significance of the study

What an Industrial Technology programs are has been an elusive concept that the "retooled" (Wicklein, 1996) industrial arts teacher of today has been struggling to understand. Foster (1996) voiced a concern asked by many: have programs just been renamed and then only altered slightly in content. The change has been cosmetic and only gives a new look to the program while referring to it now as "technology." In

reality, though, a traditional teaching approach which has been used in the Industrial Arts programs for years was simply maintained (Wicklein, 1996). It has been said there was no real substantial change in the organization or course content, just a superficial indication of such a change (Foster, 1994). If this were true, then there would be a real need for a definition of Industrial Arts or, for that matter, Industrial Technology.

Frederick G. Bonser and Lois C. Mossman of Teachers College at Columbia University wrote the following interpretation of Industrial Arts seventy years ago.

Industrial arts is a study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes (Bonser and Mossman, 1923, p5).

Then what is Industrial Technology?

One major difference between traditional industrial arts and contemporary technology education is the inclusion of the social systems of a society. Understanding these relationships will contribute to making students technologically literate (Kemp and Schwaller, 1988, p.21).

Although this interpretation of Industrial Technology by Klemp and Schwaller addresses the social and cultural aspect a bit stronger than does Bonser and Mossman's interpretation of Industrial Arts, if one looks closely at the two there would appear to be a greater similarity than dissimilarity. This study will look at what similarity exists today between the industrial technology programs taught throughout the state of Iowa.

#### Assumptions of the study

Knowing the status of Industrial Technology programs throughout Iowa served as a benchmarking tool for curriculum development in DCSD.



### Delimitations of the study

Surveys were sent to Industrial Technology teachers in the state of Iowa whose school districts are in the top twenty of enrollment for students in grades nine through twelve. Course offerings with titles the same or of similar wording were regarded as the same.

### Questions Answered

1. What Industrial Technology courses are offered in your school district?
2. At what grade level(s) (9,10,11,12) are the course offerings open to students?
3. What is the length of each course offered? (less than a semester, semester, year)
4. How many sections of each course are being offered this year?
5. How many workstations (if applicable) are available in each laboratory?
6. How many students are enrolled in each class being offered this year?
7. What is the maximum number of students allowed in a course at any one time?
8. How many Industrial Technology instructors are presently teaching classes at your high school?

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

The original intent of Industrial Arts (manual arts) was as a general education program for both boys and girls of all ages. The curriculum was design with the intention and goal to place it within the social studies (Foster, 1995). But, because of an increase in attendance of the middle class students at the time, a new emphasis began to be placed on the Manual Arts in education which was to become Industrial Arts now know as Industrial Technology. To more clearly understand this identity shift, a close look at Bonser's definition of Industrial Arts is helpful.

Industrial arts is a study of:

1. The change made by man in natural materials to increase their value in meeting need for material supplies-food, clothing, shelter, etc.
2. The effects upon individual and social life by the means used to make these changes. ...I would emphasize the second part of the definition is worthy of much more attention than is given to it (Bonser, 1922, p.121).

Foster (1994) held similar convictions that students should learn the processes which change the form of materials used in manufacturing and also gain a historical perspective of related processes, an appreciation of cultures, and the ability to work cooperatively with others. Foster (1994) concludes, the profession has chosen high-tech content over methodology and ignored social purpose related to industry. This is reflective in the units of work methodology being replaced by many with a Modular Approach to Technology Education (Petrina, 1993). Industrial Arts, Foster (1994) suggests, was implemented to replace the overly technical Manual Arts, but the social aspect in the original design was lost along the way. Now, with Technology Education in its infancy, it would appear it has returned back to the condition which demanded the creation of this program in the first place (Foster, 1994).

Although the seventy-year old philosophy of Industrial Arts may not be appropriate today, it clearly reflects many of the thoughts of today's educators and can be used to give direction to educators (Smith, 1981). It should also be noted, modern Technology Education has been shown to be a linear extension of the original philosophy of Industrial Arts (Foster, 1994b). Foster (1994b) has looked at the most popular and accepted definitions of "industrial arts" and "technology education" and holds that, although the wordings may differ, there is little difference in the meaning between the two definitions.

When examining curriculum, society has traditionally taken the position that education is a primary means of achieving national goals (Dugger, Johnson, 1992). The development of course offerings historically has been approached with a short-term look at an issue or conflict and then coming up with a fix (Wicklein, 1993). This approach most often adds to future difficulties because of the short-term nature of the solution. Critical issues and problems need to be looked at and strategic planning implemented to guide a staff through the planning process (Wicklein, 1996; Hansen, 1995). Aspects and characteristics of the student population, school district, community, local industry, and state mandates will all have to be taken into consideration in planning curriculum (Hansen, 1995). Then an acceptable balance will need to be attained to satisfy the above areas and achieve the educational goals of the district. One's experience in curriculum development, surrounding circumstance, and an understanding of curriculum development principles, will help to determine curriculum design (Hansen, 1995).

Is the change in course offerings in high schools from "industrial arts" to "industrial technology" an evolutionary or revolutionary undertaking (Volk, 1996)? To look at this change as an evolutionary one is to assume one follows the other through a

process of growth. This may not necessarily be true. Volk (1996) states to view these changes as revolutionary will then allow the two to coexist. This approach allows for the blending of the characteristics of both with an arrival at course offerings suited to the needs of today's students as deemed necessary by community, industry and education. This approach could enhance the opportunity for other subject areas to work towards offering integrated technology classes. Volk (1996) contends that discussion between Industrial Arts and Technology Education teachers should continue with the hope that the strength, relevance and value of each subject can be a catalyst for future dialog and acceptance by each other.

During the early 1960s, Industrial Arts innovators divided into three fairly distinct camps: a technology camp, an industrial group, and those championing a child-centered approach (Wright, 1992). History has a way of repeating itself. Wright (1992) sees Technology Educators again dividing into various camps. Some believe they need to make a unique contribution while another group sees a need to give special focus in their district, and yet others say any curriculum over five years old is obsolete (Wright, 1992). The challenge to technology educators is to determine a curriculum focus and structure of study and approach it as would a science department. Technology education has a focus. Technology is used to create the human-made world (Wright, 1992). There is also a structure used by many in the form of the Jackson's Mills Industrial Arts Curriculum Theory (O'Riley, 1996; Snyder and Hales, 1981) which has been update by the International Technology Education Association (ITEA, 1990, p. 17) to add four more content areas to the existing four. Along with this is also the Dutch pillars of technology format (Wolters, 1989). To be successful with any new curriculum will

require identifying relationships and interactions among technology, people, society, the environment and other disciplines (Wright, 1992).

Much of the history of Technology Education curriculum has taken on the appearance of story telling with a selective point of view (O'Riley, 1996). O'Riley is of the opinion that for more than a century, Industrial Education has taught boys hands-on skills of woodworking, metalworking, auto, electricity, and drafting. This has been at the expense of female students, who have had an interest in the technologies. Society and educational views are changing and females are now taking more courses in the technologies. With the inception of the Jackson's Mill Industrial Arts Curriculum theory (O'Riley, 1996; Snyder and Hales, 1981) the social- industrial aspects and female enrollment in courses could have been addressed. Unfortunately, this did not happen. The problem solving approach used in technology continues to be in a military form in which the world is a series of problems that lend themselves to technical solutions (Hacker, 1989). This is a male approach that does not lend itself well to female students. As the historical evidence of women's contributions are brought to light, the perspective and view of technology education will change even more.

Is technology education continuing to design and create technosubsets with an insistence on standards and universals (O'Riley, 1996)? With the writing of Technology for All Americans project there is a hope that this will change and new models will be promoting differences and different visions of technology and the world (Sander, 1995).

The relationship of Manual Arts, Industrial Arts, and Industrial Technology is not only reflected in its rich history, but also in today's programs (Foster, 1994). They overlap in concepts, theory and approaches which allows for a comparison of programs

in determining which trends in course work have credence in today's educational course offerings. Technology is not a natural phenomena, but a product of human choice (Wright, 1992). The decisions to be made regarding curriculum change must not be made lightly because their impact on students today and in the future will be long lasting. There will be a need to carefully evaluate related findings to be able to draw a sound conclusion as to present and future course offerings, changes, or implementation of new courses. The resulting curriculum needs to be designed in intelligent ways (Hansen, 1995). Wicklein (1996) expresses that with an appropriate balance of tool skills with other curriculum areas is the key to a healthy curriculum. If we are serious about making technology education a core subject in American schools then, we must think about, plan, and implement our curriculum with consistency and focused vision (Wicklein, 1996).

## CHAPTER THREE

### METHOD

Data collection will be from Industrial Technology instructors through out the state of Iowa. Twenty of the largest school districts in student population will be selected for this surveyed. The Industrial Technology teacher of each school will be asked to provide a list of courses offered in their high school, what grade level students may take the course, length of each course, number of sections being offered, number of work stations, number of students enrolled in each class this year, maximum number of students allowed in a class, how many industrial technology instructors are in the department, and to include a copy of the student registration guide. The information gathered was accurate as to course type and title; but there will be a need to review the course guidelines to cross check and verify consistency between course title and actual courses as described in the school's registration guide.

This study used the information gathered from the Industrial Technology teachers across the state of Iowa to verify what courses were being offered. The information will be used to determine if there are trends in course offerings through out the state. With this knowledge, a more educated decision can be made as to course offerings and possible changes to be implemented in the DCSD.

This study will be using a descriptive research design. The gathering of information will be done by the use of a survey of industrial technology courses offered in Iowa schools. It was helpful to monitor course content for consistency from the various schools to reduce error when making comparisons. A personal contact with instructors was also helpful when a course description given was in question as related to others of similar titles.

## CHAPTER FOUR

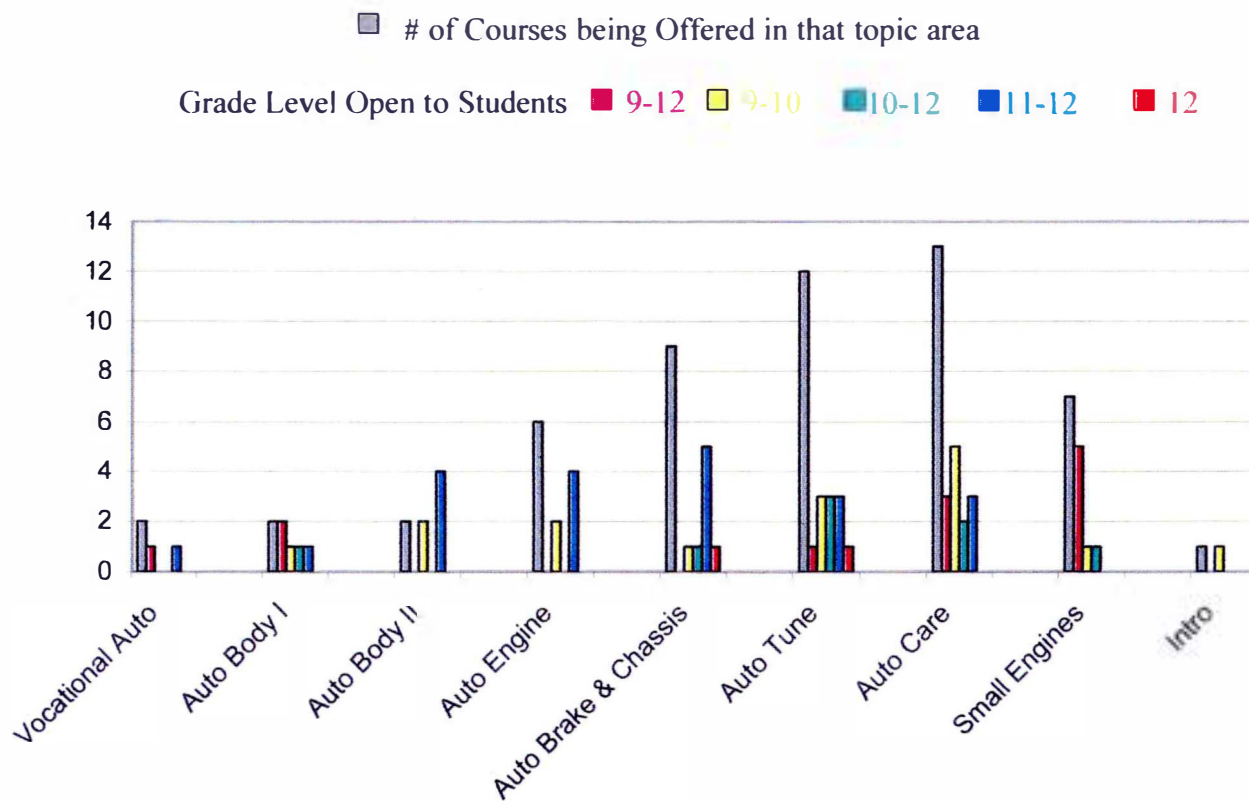
### FINDINGS

Fourteen of the twenty surveys sent out were returned and on time giving a 70% return rate. Of the survey questions answered, the question dealing with the number of stations was only completed in four of the surveys so this area will not be addressed because of insufficient data.

#### Offerings and Grade Level of Offering

##### Automotive

In the Automotive area, basic introductory level courses such as Small Engines, Auto Care, Tune, and Brakes are found in all but one high school surveyed. Auto Body was available at five high schools and advanced programs of Vocational Auto were available at only two high schools.

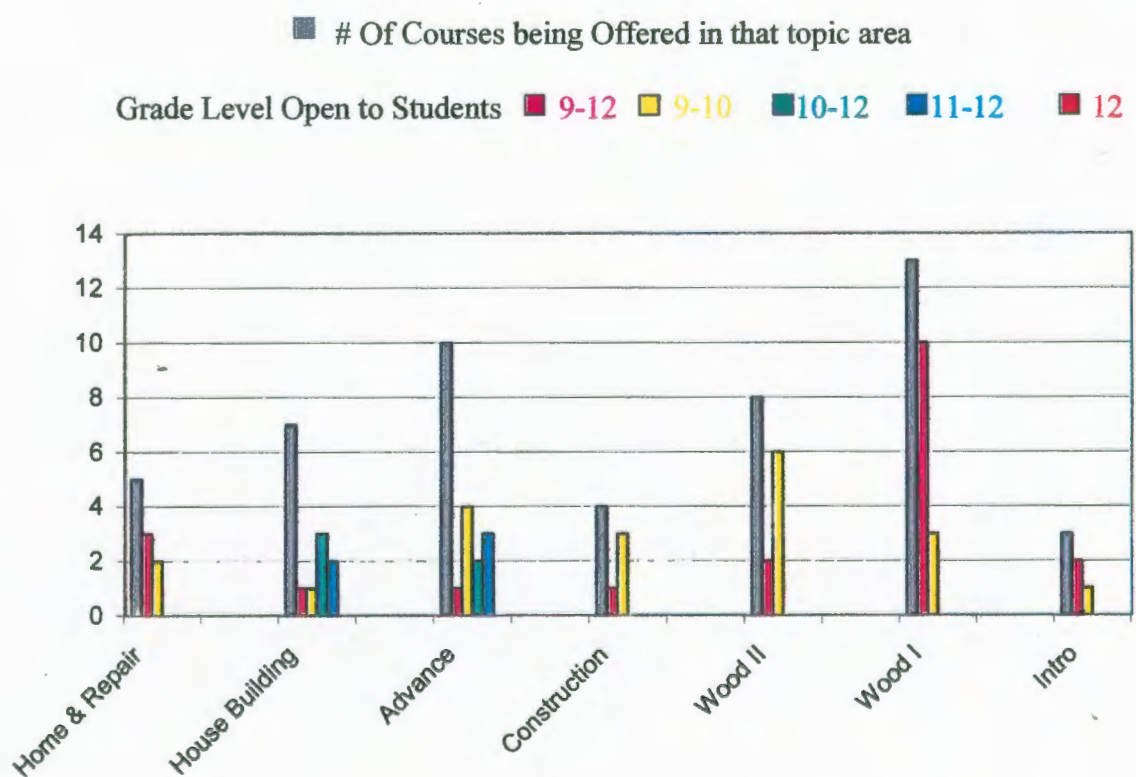




Students in only two of the fourteen schools are allowed as freshman (9) to enroll in the introductory auto classes. Four schools begin automotive course work for students at the sophomore (10) level while three begin course work as junior's (11). There are two schools that have a vocational auto and one is open to seniors (12) only with the other open to junior / senior sign up. The Small Engines course has five schools listing it as freshman level while one lists it for sophomores and another requires students to be juniors.

Woods / Construction

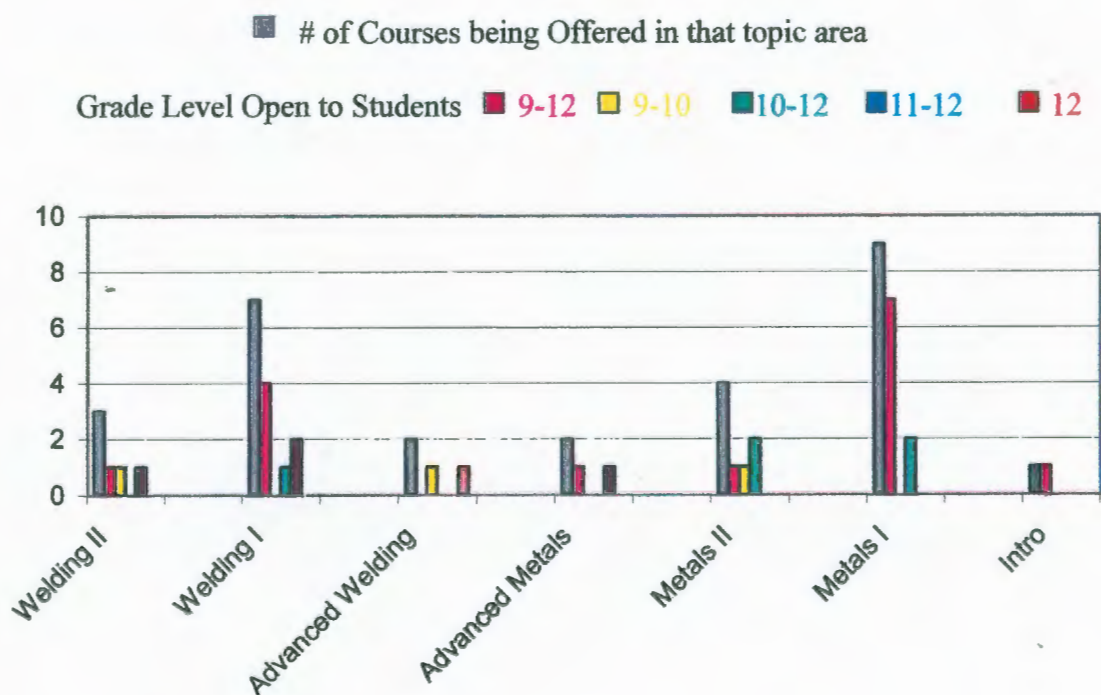
The wood working area of studying has fewer areas of advanced study than the automotive area for students to pursue. All but one school offers a beginning woods course with a freshman entry level but two schools open the course up to sophomore students.



Eight schools are offering Woods II with three of the eight offering an Advanced Woods and surprisingly one school has the course open to freshman. A Home or House Building course is offered at seven of the schools. One school's enrollment begins at the sophomore level, three are open to juniors, and two offer the course to seniors only. The area of Woods / Construction has two less overall course offerings than found in the Automotive program. There are twelve schools with higher-level course work and five with advanced course offerings.

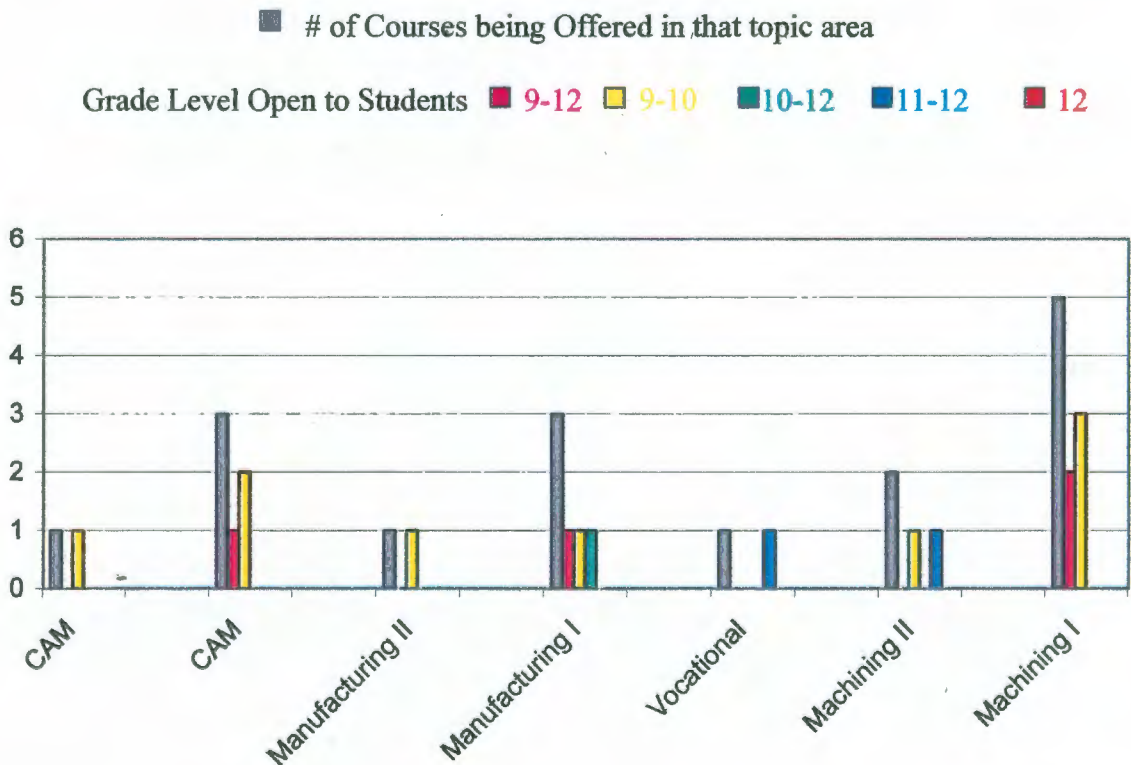
### Metals & Welding

The metal working area is not well represented by the fourteen schools in this survey. Nine schools offer a metals program open to freshman and only four of these schools offer a second level class in metals. The welding program has seven schools offering a course with one school listing this as its only metals class. Three of the schools offer a second level of welding to students.



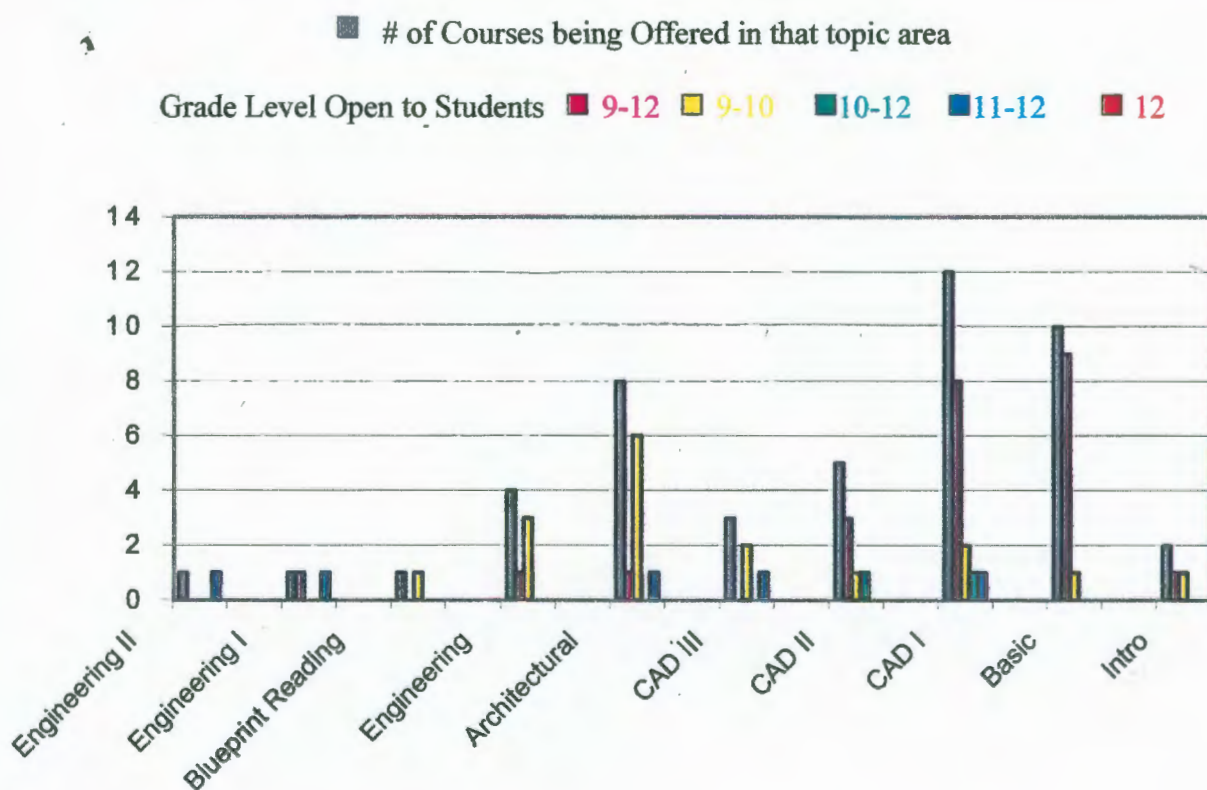
Machining

Machining programs are to include machining, manufacturing and computer aided machining (CAM). This is a very lightly covered area in the Industrial Technology Programs in Iowa. Only five schools offer machining and of those, two have a second level course. Two of the programs are open to freshman with the rest open to sophomores. Manufacturing is a program offered only by three of the fourteen schools surveyed and open at one school to freshmen, another sophomores, and the other juniors. CAM is offered at three schools for freshman and only one has a second level program available to students.



## Drafting

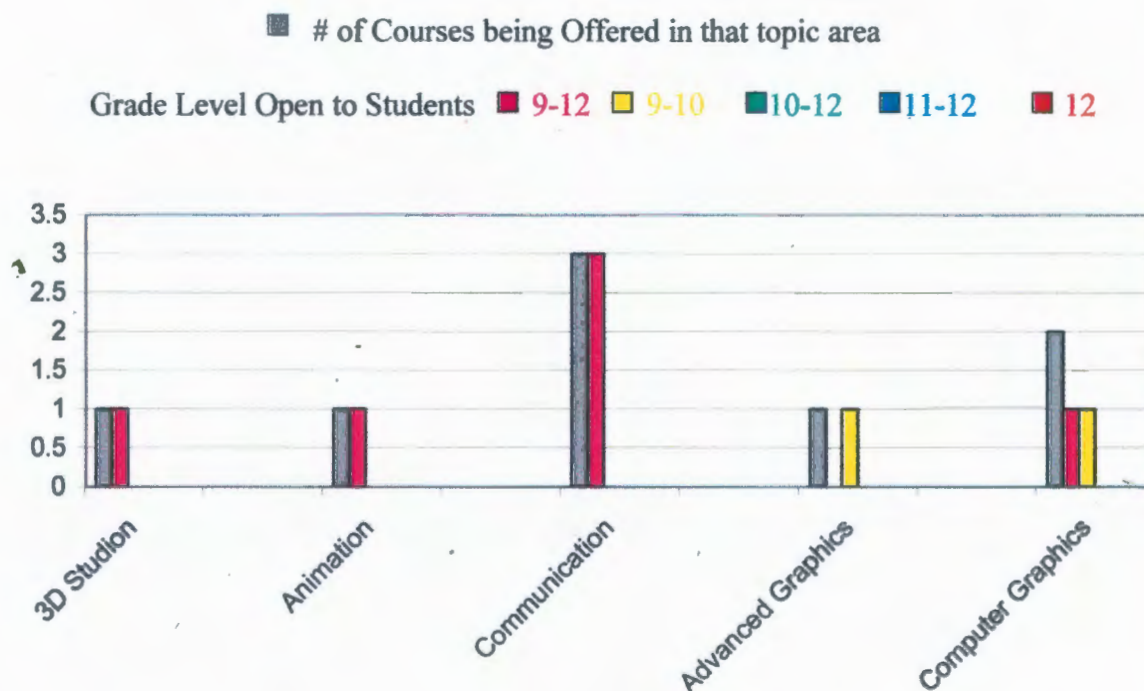
Drafting is an area much like the automotive in that there are a great number of courses to select from. The beginning level programs are predominantly open to freshman with two exceptions that require a student to be a sophomore. CAD courses allow for the greatest advancement in levels with the remaining course less dependent on one another.



## Communication

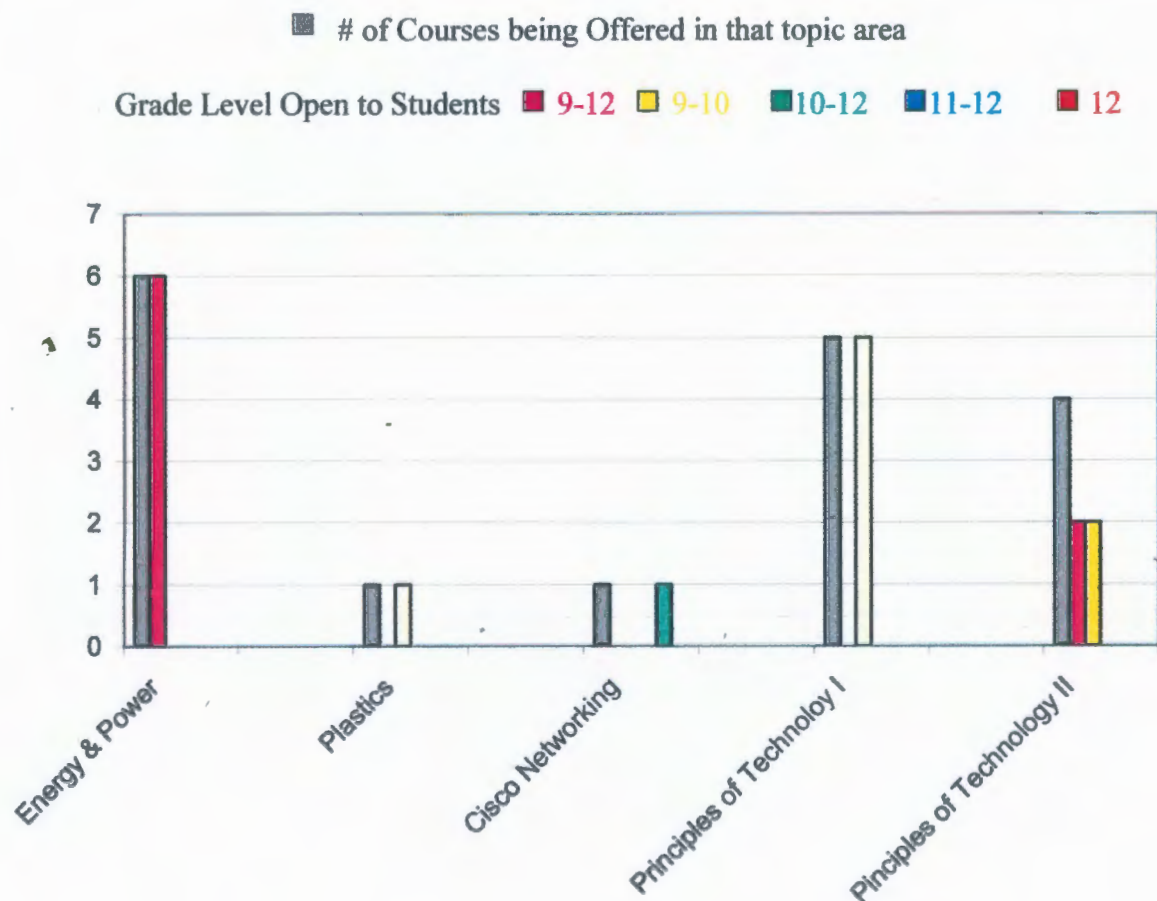
The area of communications is relatively small. With the exception of graphics the courses of 3D Studio, Animation, and Communication are newer programs to the area of Industrial Technology. Due to this, they are poorly represented in offerings and

number of sections. Of the five schools offering a program, they are open to freshman with only two schools offering a second level of the course.



### Assorted

Energy and Power, Plastics, Cisco Networking, and Principles of Technology I and II are several courses that do not fit well into the above categories. Energy and power is usually considered an introductory class and is offered by six schools to freshman. Plastics is in only one school and offered to sophomores. Cisco Networking is also only in one school and being offered to juniors. Principles of Technology I (PT) is being offered at five schools to sophomores and four of the schools offer PT II to the students.



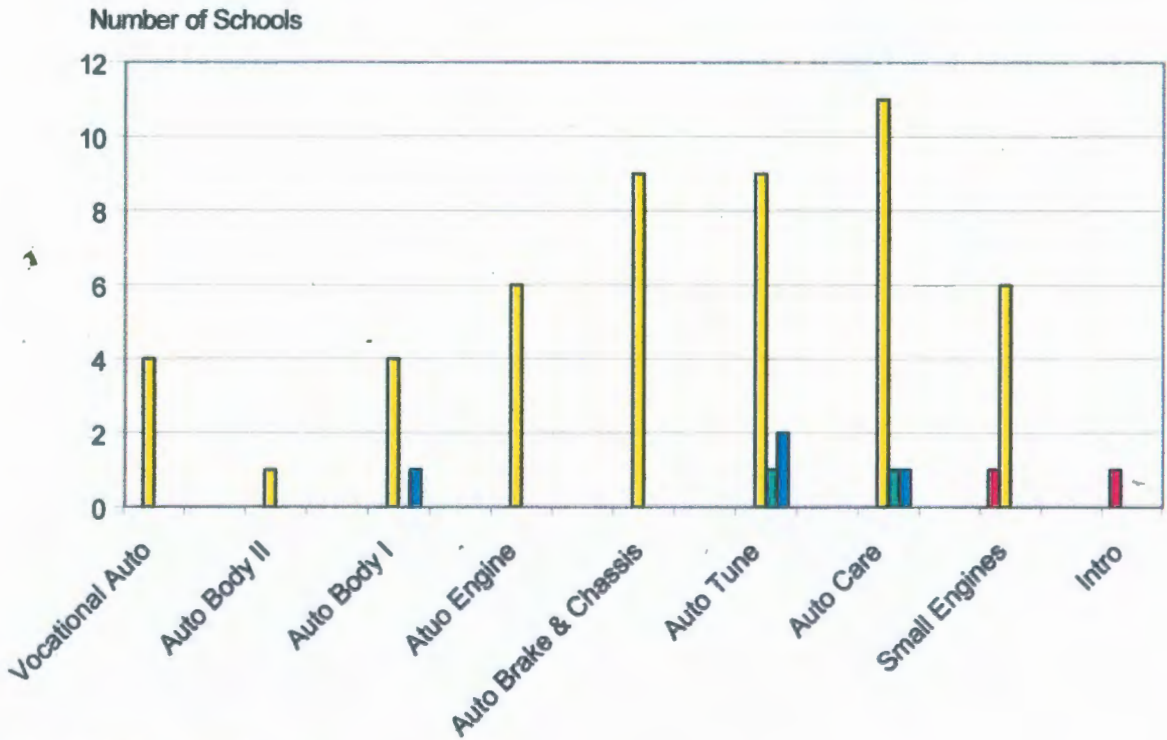
### Course Offering Length

Course offerings may be 9-week, semester, trimester, or one year in duration.

The semester is an 18-week time period. The year for Iowa students is 180 days. A trimester is 13-weeks in duration. You will observe that the semester is used for the great majority of course work being offered to students.

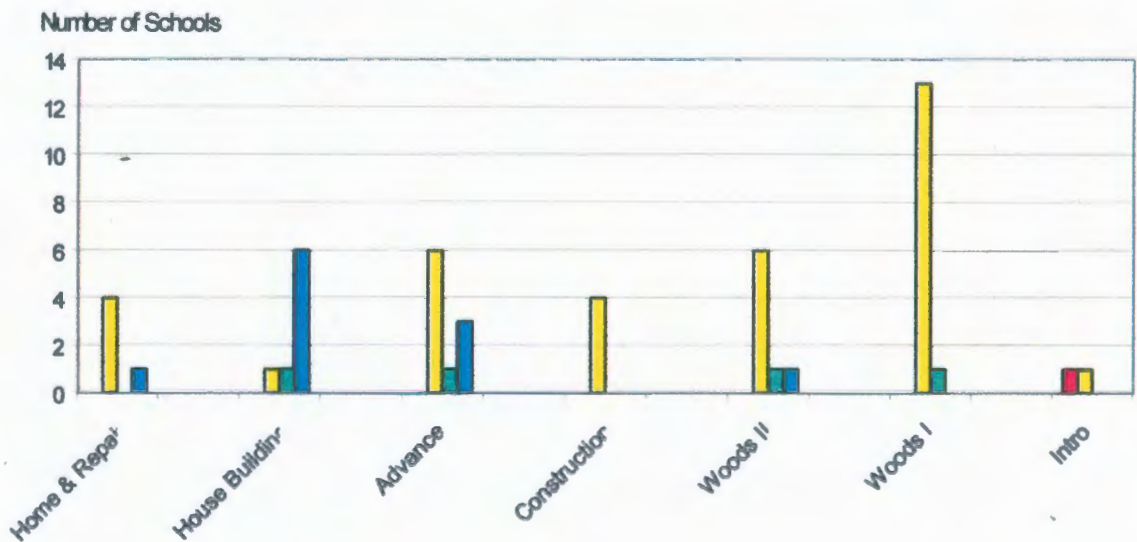
Automotive

■ 9-weeks   
 ■ semester   
 ■ trimester   
 ■ year



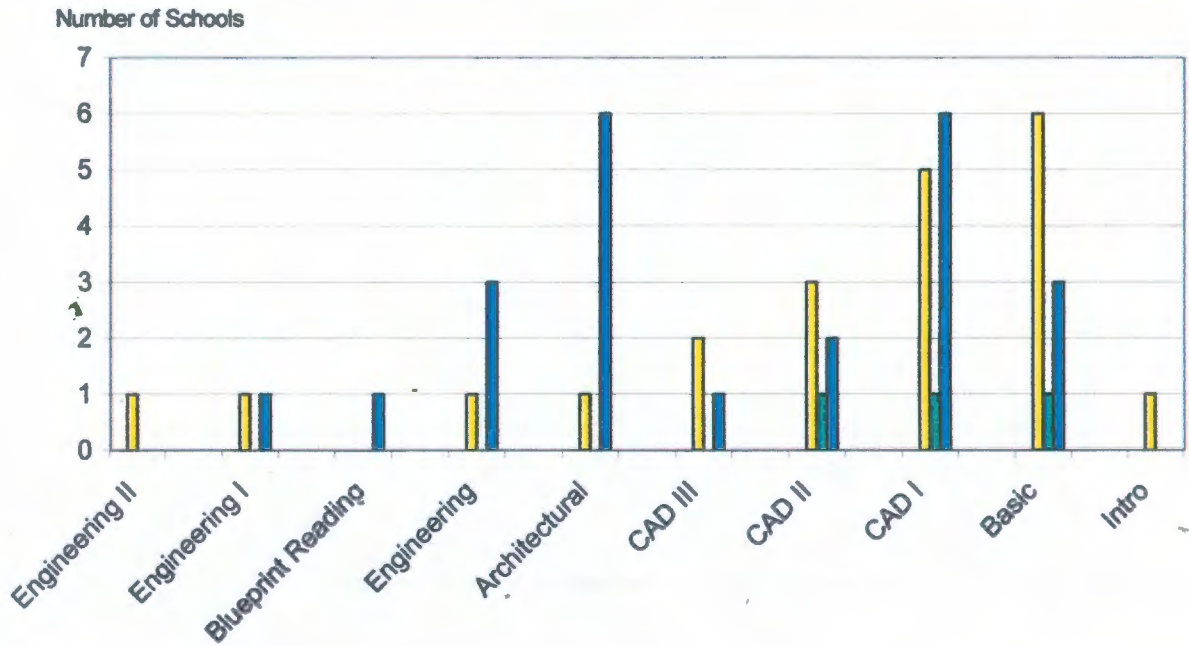
Woods / Construction

■ 9-weeks   
 ■ semester   
 ■ trimester   
 ■ year



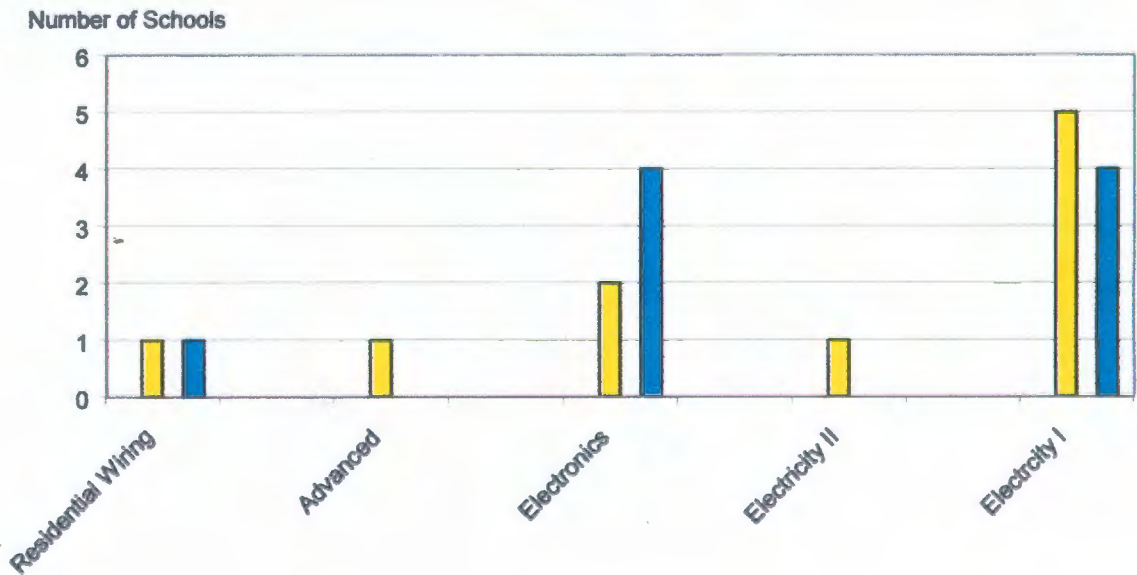
Drafting

■ 9-weeks    ■ semester    ■ trimester    ■ year



Electricity

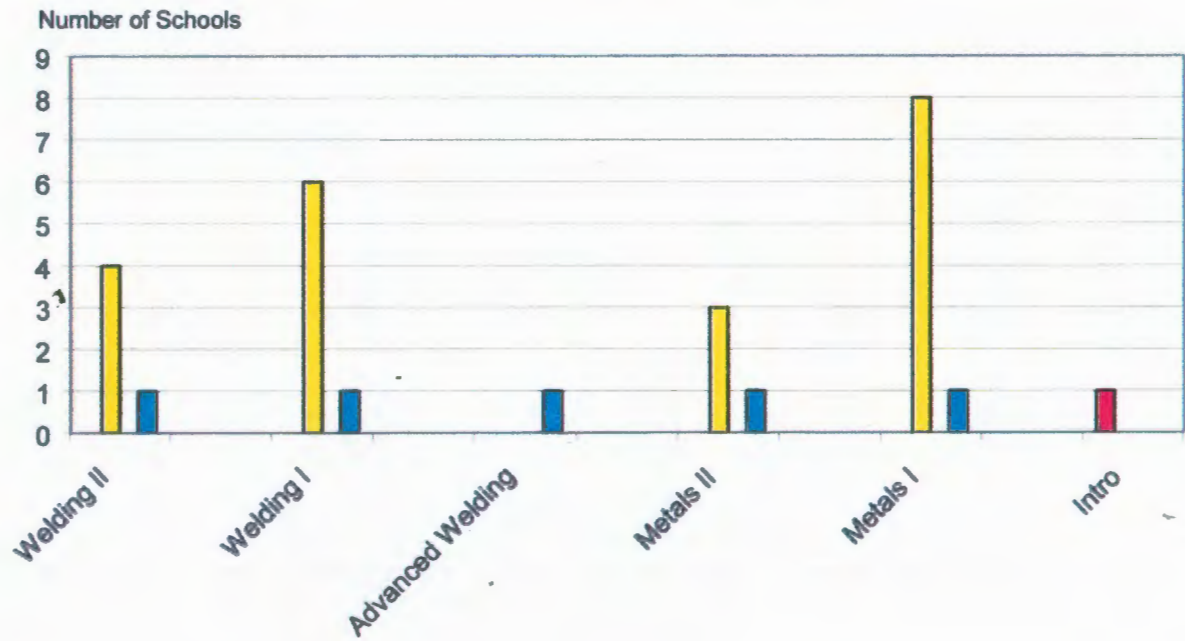
■ 9-weeks    ■ semester    ■ trimester    ■ year





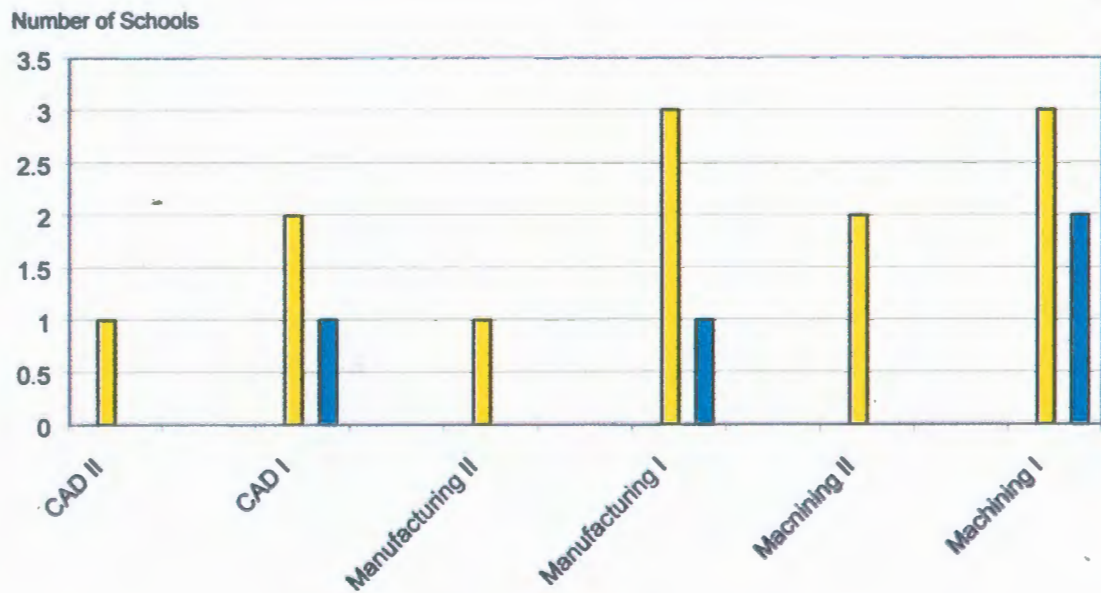
Metals & Welding

■ 9-weeks   
 ■ semester   
 ■ trimester   
 ■ year



Machining

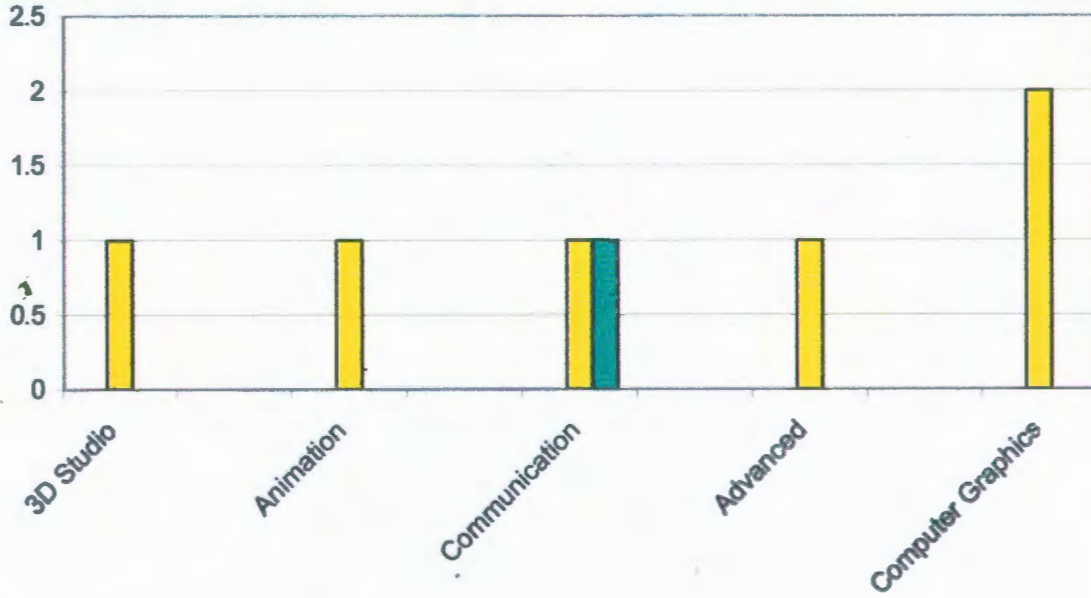
■ 9-weeks   
 ■ semester   
 ■ trimester   
 ■ year



Communication

■ 9-weeks   ■ semester   ■ trimester   ■ year

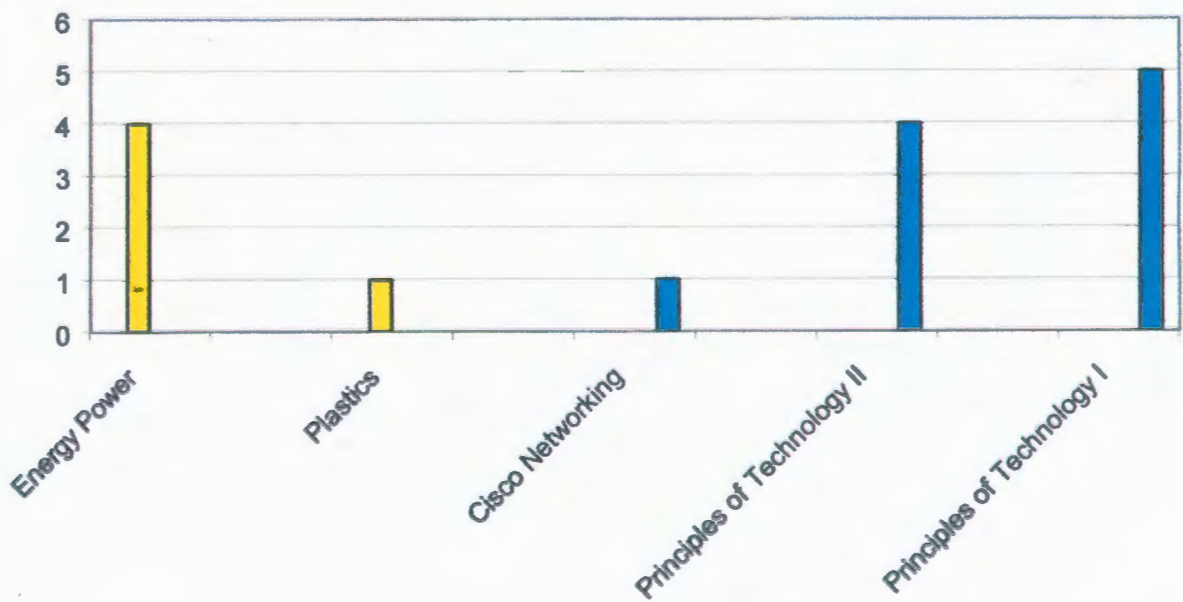
Number of Schools



Assorted

■ 9-weeks   ■ semester   ■ trimester   ■ year

Number of Schools

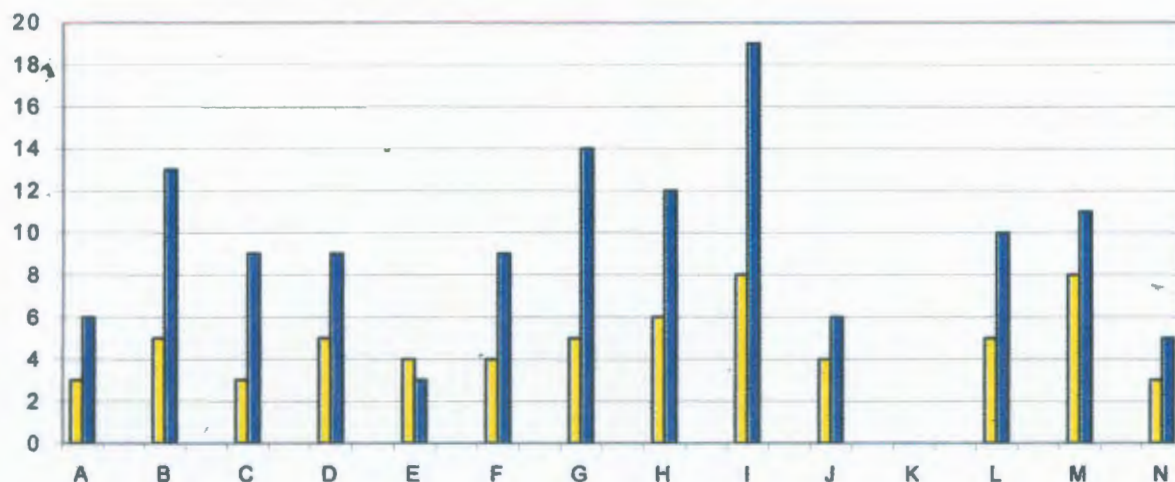


### Number of Course Offerings & Number of Sections

The following is how many courses are being offered at each school and the number of sections of that course being taught.

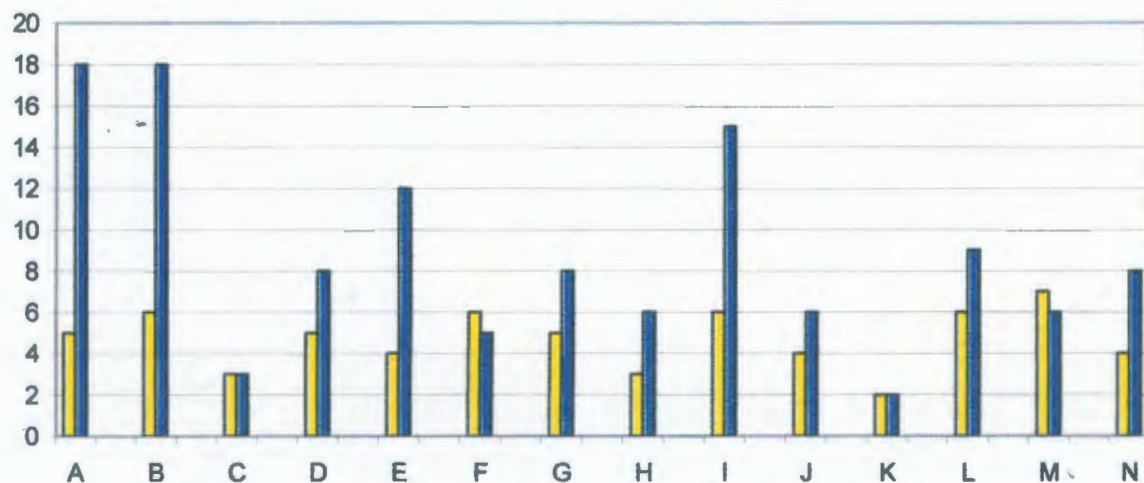
#### Automotive

■ Number of Course offerings    ■ Number of Sections



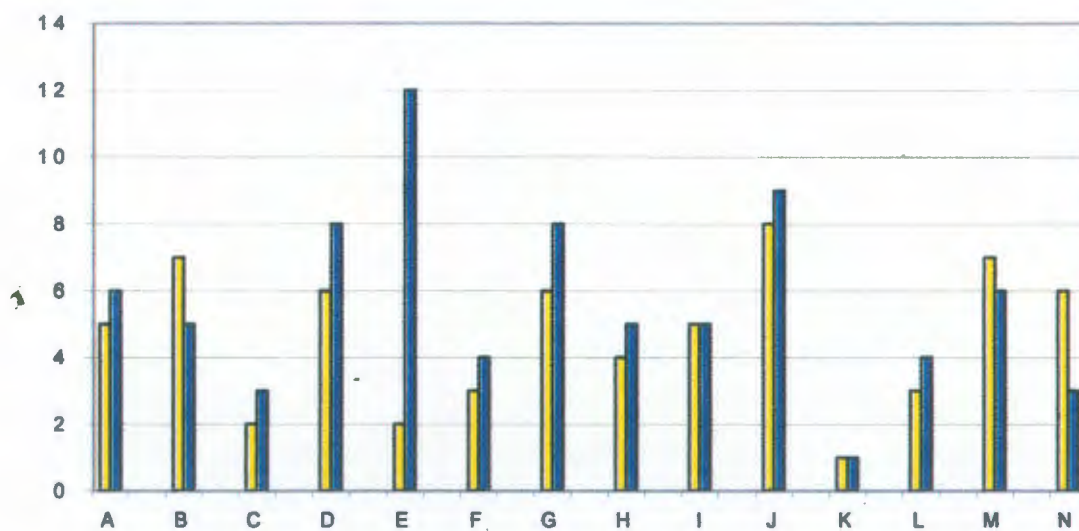
#### Wood / Construction

■ Number of Course offerings    ■ Number of Sections

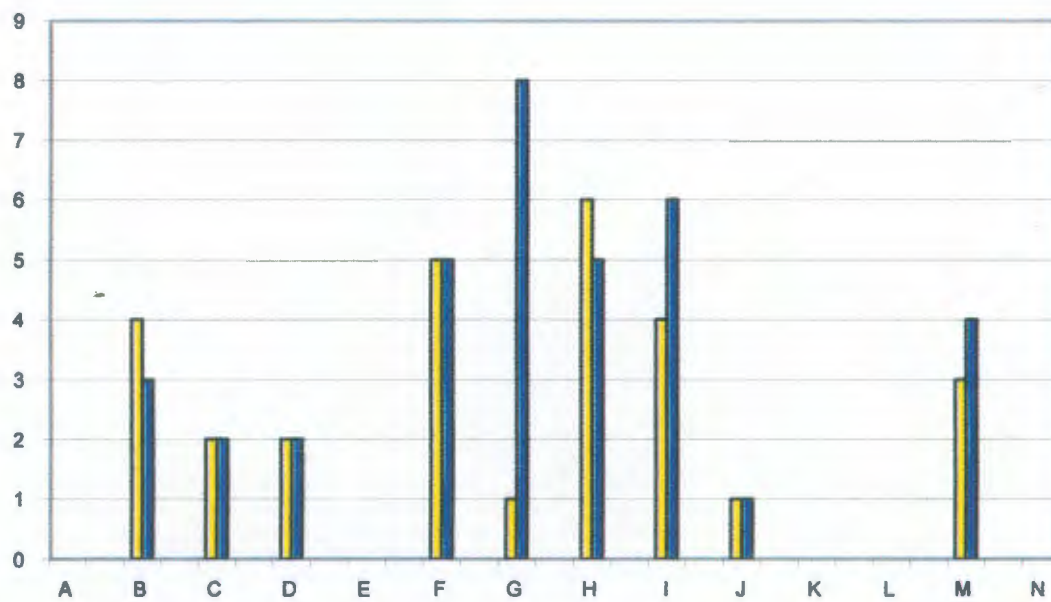


Drafting

■ Number of Course offerings    
 ■ Number of Sections

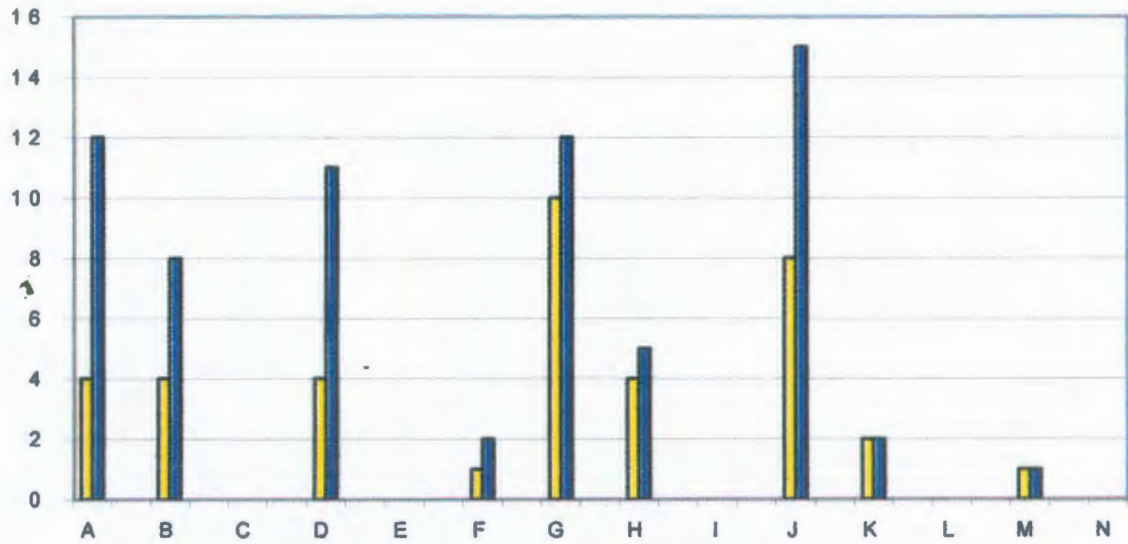
Electricity

■ Number of Course offerings    
 ■ Number of Sections



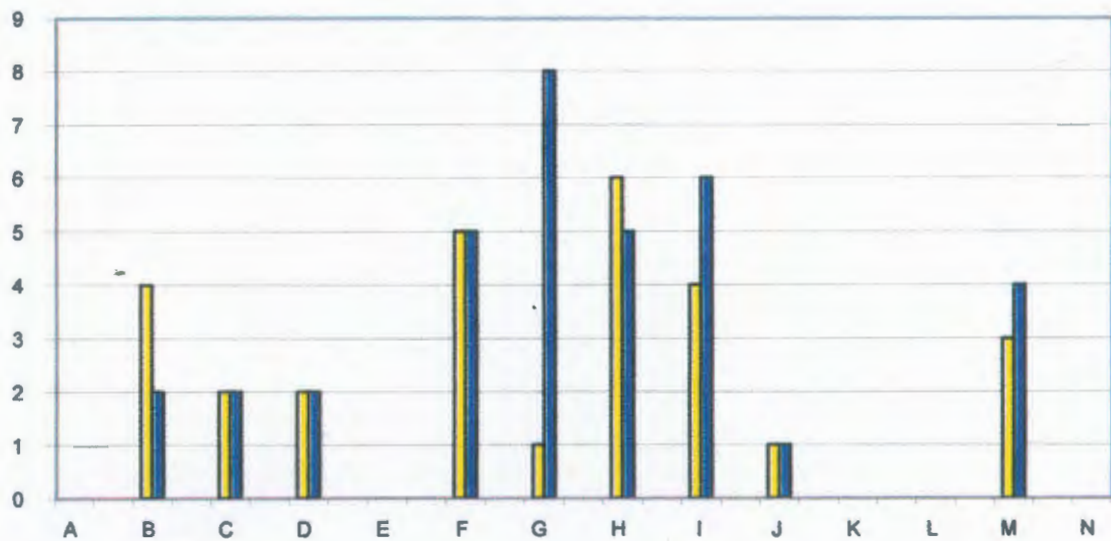
### Metals & Welding

■ Number of Course offerings    ■ Number of Sections



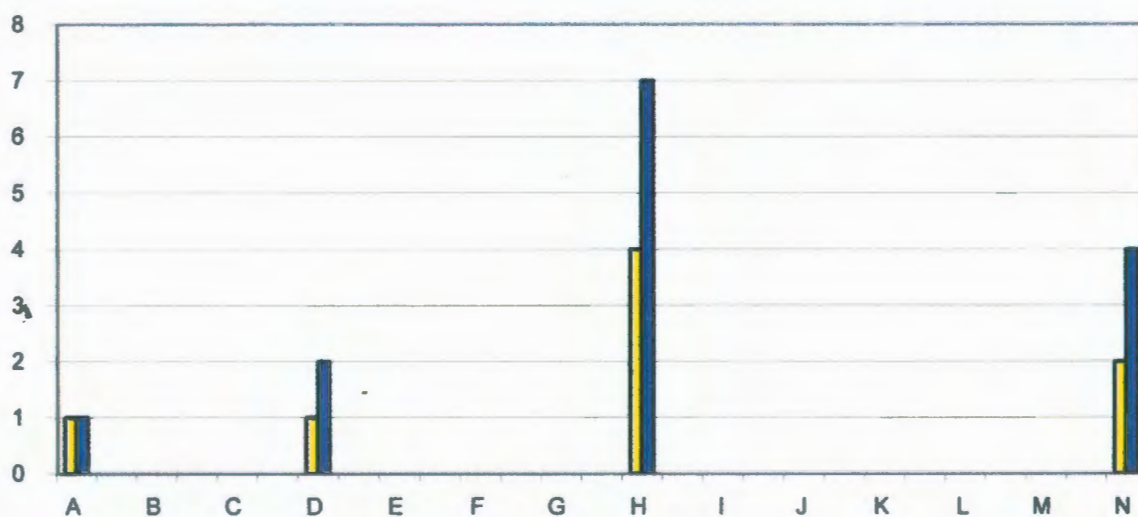
### Machining

■ Number of Course offerings    ■ Number of Sections



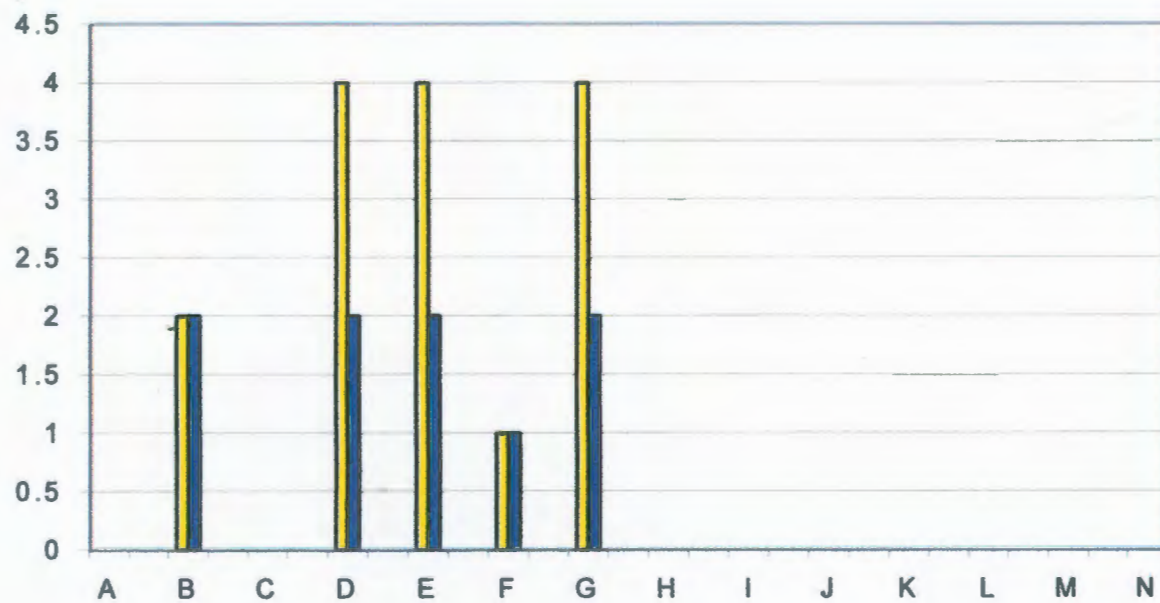
### Communication

■ Number of Course offerings    ■ Number of Sections



### Principles of Technology

■ Number of Course offerings    ■ Number of Sections





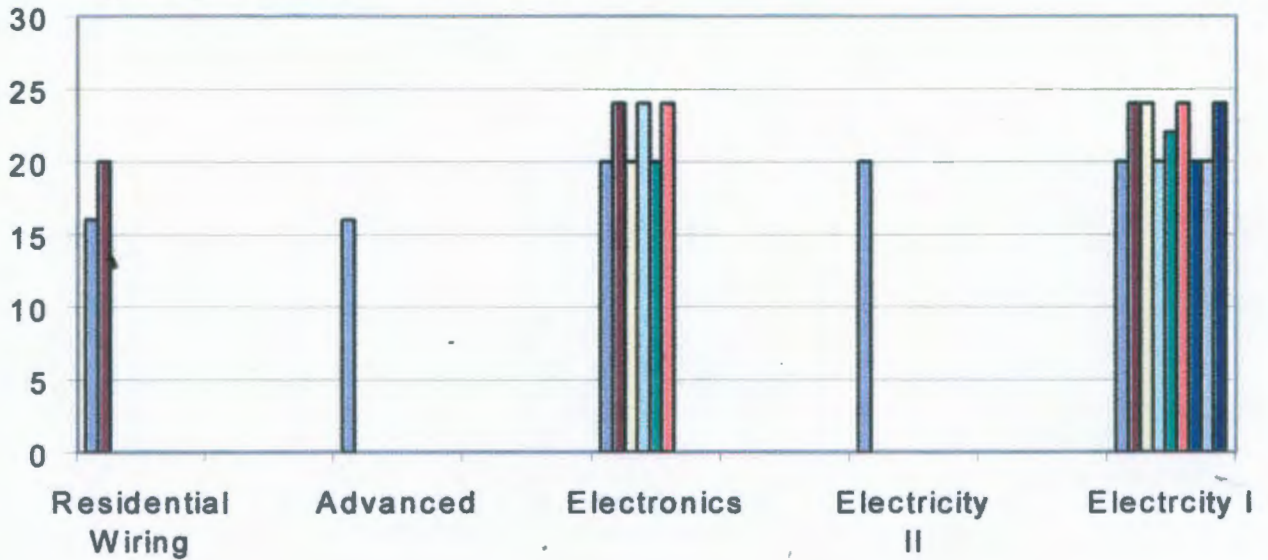




Electricity

Each colored line represents one section

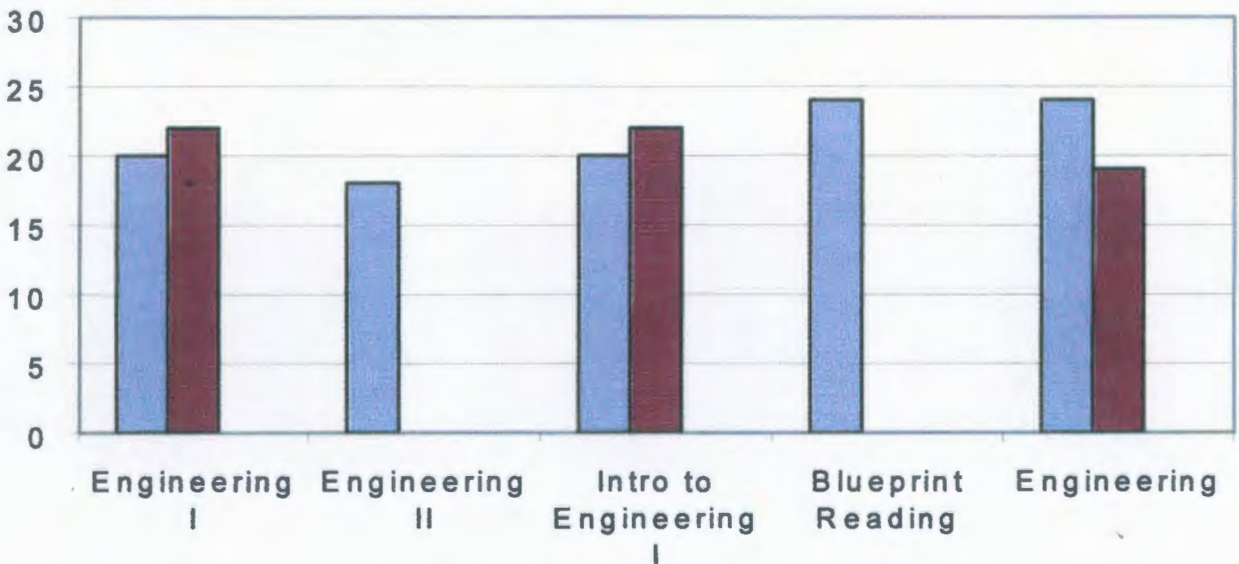
Number of Students in each section



Drafting

Each colored line represents one section

Number of Students in each section

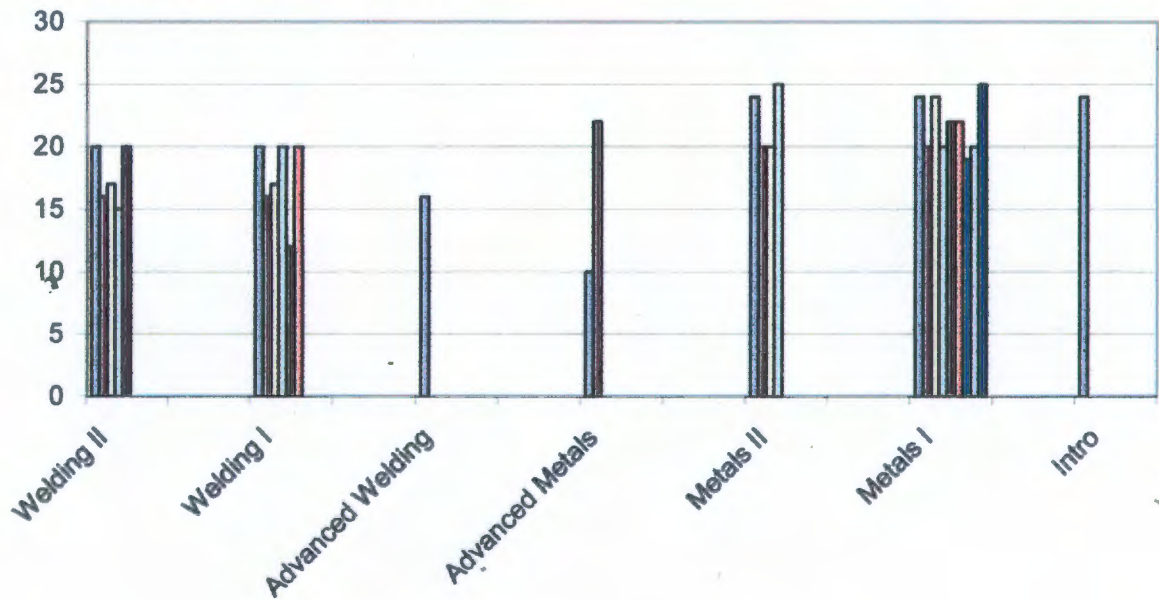




Metals & Welding

Each colored line represents one section

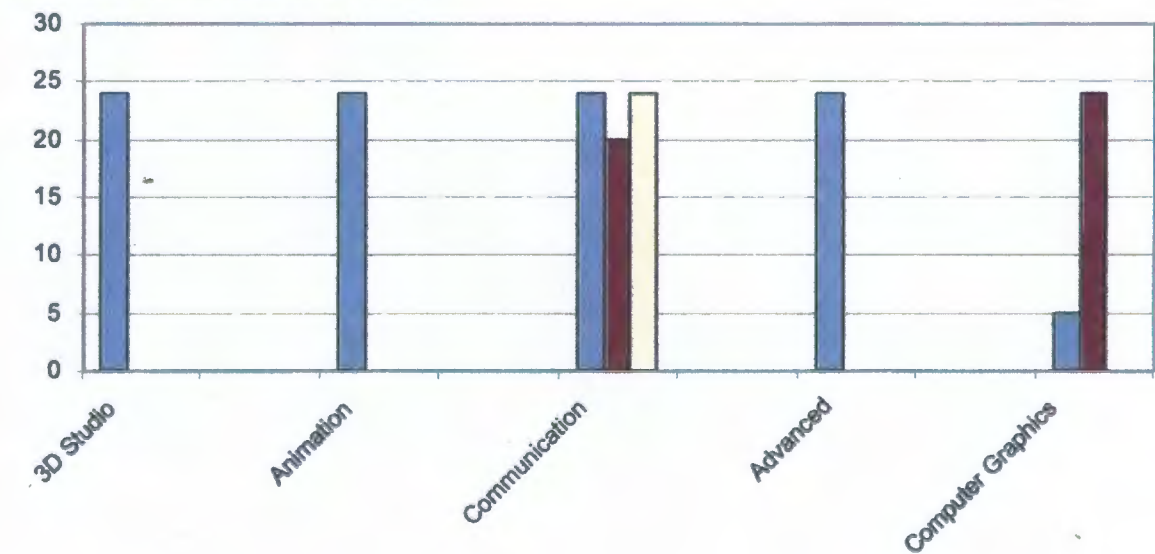
Number of Students in each section



Communication

Each colored line represents one section

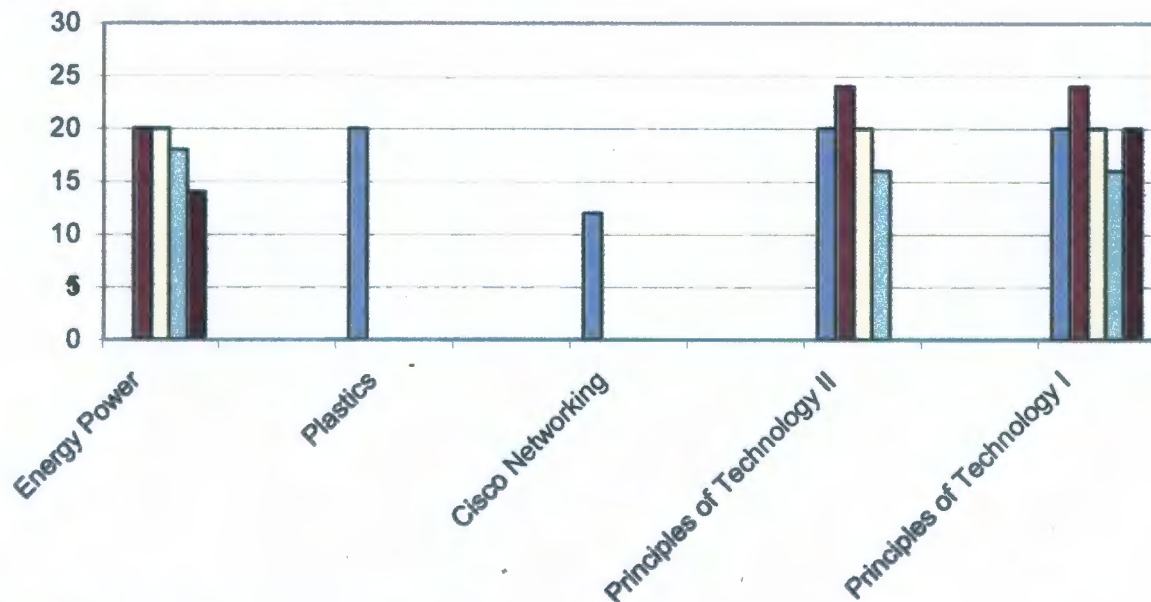
Number of Students in each section



Assorted

Each colored line represents one section

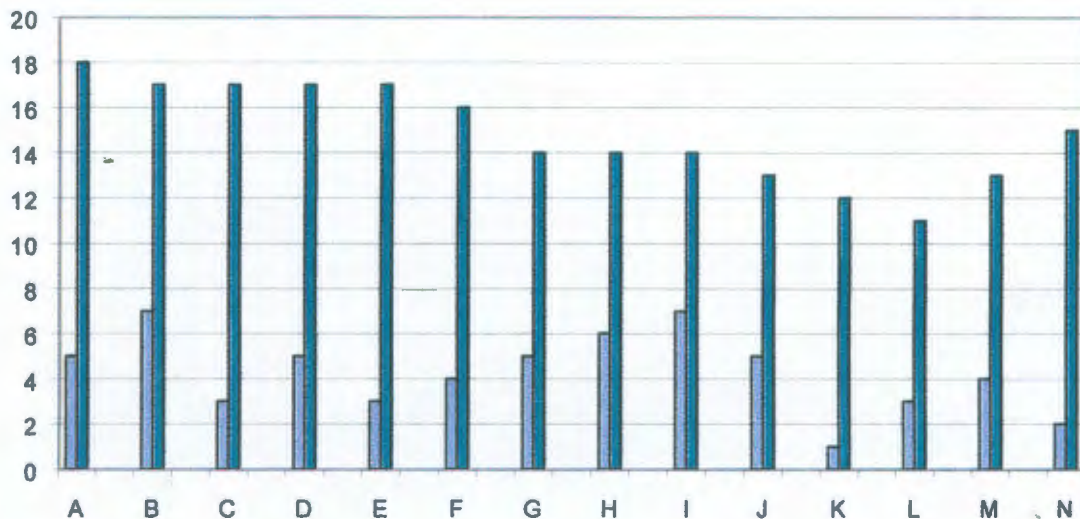
Number of Students in each section



Number of Instructors per School

The number of instructors in a school can be directly reflective of the size of the school, its course offerings, sections and number of students being served.

■ Number of Instructors      ■ Number of Students in Building times 100



## CHAPTER FIVE

### CONCLUSIONS

There is a direct relationship between school size, course offerings, and the number of sections available to students, but there is no way to determine for sure what course work will be offered by relative school size. From the surveys certain courses consistently appear to be present in the curriculum offerings of schools. The number of offerings and depth to which a student may pursue course work is reflected in school size but not determined by this factor alone. The exact content and course coverage is not known through this survey because the title and course description is only a small verification of course content. It has been determined by this survey that schools in Iowa share many similar characteristics in course offerings and depth of studying in these offerings. There is also some indication of independence in types of courses offered. This may be reflective of the community, school, or more likely the instructors of the various programs. In relationship to the course work at DCSD, there is an overwhelming similarity in all areas that were surveyed. This only means that DCSD is teaching what the rest of the State of Iowa is in comparison to the survey. In the development of curriculum, this study is but the tip of the iceberg. There will need to be visitations to schools, local industries, community colleges, and a great deal of communication between staff and administration of a district. Then after some goals have been established the real work will begin in the implementation of those changes.

## CHAPTER SIX

### RECOMMENDATIONS

The data gathered here is a good beginning to a better understanding of the courses being offered in the State of Iowa. I would suggest further study be done to determine the content being taught in courses offered. The purpose of such a study would be to unify programs across the state to give the 2 and 4 year higher education centers documentation as to what is being taught in our high schools today. Also, keep in mind the world is changing to a global economy so it will be necessary to increase the width of this research to include other states and maybe nations. Although one must not lose sight of the need to work with and help serve the community around a school in curriculum development.

## REFERENCES

Bonser, F. (1922). Industrial arts as a factor in the education of the citizen. Teachers College Record, 23(1), 121-125.

Bonser, F., & Mossman, L. (1923). Industrial arts for elementary schools. New York: MacMillan.

Cantor, J. A. (1997). Registered pre-apprenticeship: Successful practices linking school to work. Journal of Industrial Teacher Education, 34(3), 35-58.

Dugger, J., & Johnson, D. (1992). A comparison of principles of technology and high school physics student achievement using a principles of technology achievement test. Journal of Technology Education [On line], 4(1) Available : <http://scholar.lib.vt.edu/ejournals>

Dugger, W. (1985). Introduction in American industrial arts association, Technology education: Perspective on implementation, Reston, VA: American Industrial Arts Association

Foster, P. N. (1994). Industrial art/technology education as a social study: the original intent? Journal of Technology Education [On line], 6(2) Available : <http://scholar.lib.vt.edu/ejournals>

Foster, P. N. (1994b). Technology education: AKA industrial arts. Journal of Technology Education, 5(2), 15-30.

Hacker, S. (1989). Pleasure, Power & Technology. London, UK: Unwin Hyman, Inc.

Hansen, R.E. (1995). Five principles for guiding curriculum development practice: The case of technology teacher education. Journal of Teacher Education, 32(2), 30-50.

International Technology Education Association. (1990). A conceptual framework for technology education. Reston, VA: Author.

Kemp, W. & Schwaller, A. (1988). Introduction to instructional strategies. In W. Kemp & A. Schwaller, (Eds.) Instructional Strategies for Technology Education. (p.16-34). Mission Hills, CA: Glencoe.

O'Riley, P. (1996). A different storytelling of technology education curriculum revisions: a storytelling of difference. Journal of Technology Education [On line], 7(2) Available : <http://scholar.lib.vt.edu/ejournals>

Petrina, S. (1993). Under the corporate thumb: Troubles with our MATE (modular approach to technology education). Journal of Technology Education, 5(1), 72-81.

Sander, M. E. (1995). Technology for all Americans. Journal of Technology Education, 6(2), 2-3.

Smith, D. (1981). Industrial arts founded. In R. Wright & R. Barella, (Eds) An interpretive history of industrial arts. Bloomington, IL: McKnight.

Snyder, L. and Hales, J. (1981). Jackson's Mill Industrial Arts Curriculum Theory. Charleston, WV: West Virginia Department of Education.

Volk, K. (1996). Industrial arts revisited: an examination of the subject's continued strength, relevance and value. Journal of technology Education. [On line], 8(1). Available : <http://scholar.lib.vt.edu/ejournals>

Wicklein, R. C. (1993). Identifying critical issues and problems in technology education using a modified-delphi technique. Journal of Technology Education. 5(1), 54-71

Wicklen, R.C. (1996). Curriculum focus for technology education. Journal of Technology Education. [On line], 5(1). Available : <http://scholar.lib.vt.edu/ejournals>

Wolters, F. (1989). A patt study among 10 to 12 year-olds. Journal of Technology Education, 1(1).

Wright, R.T. (1992). Building a defensible curriculum base. Journal of Technology Education, 3(2), 67-72.



**Appendix A**

**Letter of Introduction for Survey**

# Hempstead Senior High School

David Olson  
Principal

3715 Pennsylvania Avenue  
Dubuque, Iowa 52002-3792  
(319) 588-5160 FAX (319) 588-8451

Martha Connolly  
Ed Mulholland  
William Peck  
Harry Robbins  
Assistant Principals

Dear

Have you every wondered what the Industrial Technology course offerings are at other school districts throughout Iowa? Here is an opportunity to find out. Hempstead High School at Dubuque Iowa is collecting information on course titles, their descriptions, credits, length of classes, class sizes and maximum class size. This information and data will be used to support changes and recommendations in our curriculum.

The enclosed survey will take about sixteen minutes or less of your time and contribute greatly to an overall picture of the status of Industrial Technology programs in today's High Schools across the state of Iowa.

In filling out the survey please follow these steps:

- Column 1 -write in the course titles
- Column 2 -place an X in box that represents grade level course is offered
- Column 3-6 -place the appropriate letter in each box to represent response
- Column 7 -write in number for maximum class capacity

Check to see that the school, person, phone number, and other information at top of survey is complete.

I look forward to receiving your survey and wish to **thank you** in advance for your contribution. If would wish to have a copy of the surveys please indicate. If you should wish not to have your survey released to others please indicate.

Please place the completed survey and a course description in the enclosed self-addressed stamped envelope. If you should have any questions or need to contact me please call.

Sincerely,

Boyd A. Card  
Department Head  
Hempstead High School  
Phone: School  
Home



*Home of the Mustangs!*

**Appendix B**  
**Industrial Technology Survey**

# Industrial Technology Course Survey

School:					Person Responding:				
Telephone Number:					Best Time Of Day For Possible Contact:				
Number Of Instructors In Department:					Number Of Individual Shop Areas:				
School Enrollment:					Number Of Periods In Your School Day				
Industrial Technology Cluster  Course Title	Grade level(s) Courses are Offered to students				Length of Course Offerings	Number of sections of this class this year	Number of laboratory work stations	Class size range	Maximum Capacity a class may be
	9	10	11	12					
					B Sem <th>B 2</th> <th>B 5-9</th> <th>B 16-21</th> <td></td>	B 2	B 5-9	B 16-21	
					C Year <th>C 3</th> <th>C 10-14</th> <th>C 22-28</th> <td></td>	C 3	C 10-14	C 22-28	
					D other <th>D 4</th> <th>D 15-19</th> <th>D 29-35</th> <td></td>	D 4	D 15-19	D 29-35	
Automotive	9	10	11	12					
Drafting	9	10	11	12					
Electricity/Electronics	9	10	11	12					
Metal/Machining	9	10	11	12					
Welding	9	10	11	12					
Woodworking	9	10	11	12					
Other courses	9	10	11	12					

Please provide a copy of course descriptions used in your registration guide and include it in the return envelope with your survey.

**Please return the survey and course description in the self-addressed stamped envelope enclosed by April 5<sup>th</sup>.**

**Thank You!**