

# **Improved Guidelines and Models for Traditional Advising of Undergraduate Students**

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## **1.0 Abstract**

Through their academic tenure, students' needs are constantly changing. As incoming freshmen, they are concerned about transitioning to the college environment and finding a major that meets their interests; as seniors, they are concerned with what they need to do to graduate and where they will be after graduation. This paper attempts to itemize the general needs of students as they progress through their college careers and recommends ways for the university to meet these needs through existing and new technologies.

## **2.0 Introduction**

Concerns over traditional advising techniques have caused much national debate and many faculty to stop and reexamine the existing advising programs. As a result we are attempting to take a first step to address these concerns and to explore the development of enhanced advising guidelines and improvement upon advising procedures.

This paper discusses some of the problems associated with traditional advising and some of the advisee's needs. The paper goes on to show the resources available and possible improvements to these and other resources provided by the University. Additionally, the paper includes a brief explanation of the basic responsibilities and qualities of being an advisee or an adviser. The purpose of this paper is to provide a guide and give suggestions to advisers about possible methods of solving these problems.

## **3.0 Organization**

This report is separated into thirteen distinct sections. The previous two sections deal with the abstract and introduction. The fourth section defines traditional advising and goes on to enumerate the most pressing concerns of the current system that are being faced by universities nationwide. The fifth section focuses on the special needs and concerns expressed by the advisees. Section six suggests possible resources provided by the university to address problems and/or questions undergraduate students may have and to respond to their information needs. The seventh and eighth sections go on to define the qualities, relationships, goals, and responsibilities. Within

these five sections an explanation the problems and needs associated with the current advising system and the overall effects the adviser/advisee relationship entails.

The ninth, tenth, and eleventh section provides possible models and solutions to the pre-established set of problems, needs, and goals of the university/advisee relationship, adviser/advisee relationship, and the technological aspects of information flow. Section twelve of the paper encapsulates the plethora of information provided throughout the report and summarizes the key points concerning successful advising and advising models/guidelines. Finally, a detailed reference section provides information on possible resources for future reference.

#### **4.0 Problems With Traditional Advising**

Traditionally, the main obligation of an advisor has been to provide “academic counseling” on an infrequent basis, typically once a semester. The advisor makes course recommendations or selections based upon a cursory examination of the student’s academic record and performance in previous course work. Most often, very little is done to establish personal contact or a lasting relationship with the student beyond course selection advising.

Advising, as described above, follows a planning-insensitive protocol. This means that faculty members do not believe that their guidance will greatly affect a student’s academic program. The student has already made the decisions that they wish to make, and, furthermore, they are irrevocable. The role of technology further impedes upon the adviser/advisee inter-relationship. The automated telephone registration system invalidates any role the adviser plays in the undergraduate's course selection.

In addition, there are many aspects of the student’s academic and professional career that are not fully addressed by the traditional advising mode. This lack of “complete advising” in traditional advisor/advisee interaction is a concern of both students and faculty. Especially disturbing to undergraduate students, parents, and university officials is the insufficient information transfer between the university and the undergraduate student as a whole. This deficiency in the ability to effectively convey information from the university to faculty, advisers, students, and even parents is extremely detrimental to the student's academic success.

This lack of quality advising may be the result of the criteria in which the professor is judged in order to receive tenure. In the present system the success of faculty is measure in their ability to be awarded publications, grants, fellowships, and their ability to gain a predominant reputation. Though these attributes are indeed indications of faculty success, they make no reference to the professor's opportunity to help expand the intellectual growth of the student. "There is a temptation, resisted by the more conscientious faculty, to have less concern for students'

personal and professional development and more concern for their publicity perceived impact on professors, their departments, and the university" (Bube 1986).

The problems that are largely common among university engineering programs create the need for better guidelines for the advising program. These problems involve, among other things, the lack of the following: frequent contact, networking, guidance about specialization, exposure to research, adviser's knowledge about required courses, and improper matching of students with their appropriate adviser. Each of these concerns is discussed individually in the following subsections.

#### **4.1 Lack of Frequent Contact**

Most interactions with professors are currently restricted to formal settings such as classroom lectures and infrequent advising sessions. However, student - professor interactions that extend beyond the classroom have been shown to have numerous benefits. These benefits include an increase in a professor's impact of influencing a student's career and educational aspirations, and increased recruitment and retention of engineering students.

In general, interactions with professors that extend beyond the classroom have a direct influence on a student's academic and social identity and self esteem. These interactions can convey professor norms and values, thereby showing students "what engineering is and what engineers do." Furthermore, studies show that students who participate in interactions with professors experience a gain in intellectual orientation (Lacy 1978). This is due to the socialization process the student - professor relationship encourages. Essentially, students learn to think independently, theoretically, and more completely.

Interactions with professors can also enhance a professor's impact as a role model, particularly his or her ability to influence a student's decision to pursue engineering. One reason is that effective social learning of normative values and attitudes often occurs in informal as well as formal interactions (Pascarella 1991). Unfortunately, students often receive only the former type of contact. When these interactions are expanded, however, students may be better able to visualize themselves as engineers via the eyes of a role model they respect and admire.

Furthermore, studies have shown that student - professor interactions can increase the persistence rate of students in engineering. It has been shown that the degree of student - professor *social* contact has a significant influent on bachelor's degree completion and educational attainment through the doctoral degree (Pascarella 1986). Additionally, the amount of student - professor *nonclassroom* contact and the *frequency* of interactions with professors to discuss intellectual matters also positively influences the retention rates of students in engineering (Pascarella 1991). Similar to involvement in undergraduate research with a professor, student - professor

interactions serve to integrate the student's classroom and nonclassroom experiences. Also similar to undergraduate research, these interactions can positively influence retention rates (Pascarella 1977).

Additionally, professors can play a nontrivial role in a student's career interest and career choice. According to a study done by Komarovsky, the magnitude of this role is "a function of the amount of informal interaction between the student and individual faculty member" (1985). He also found that greater amounts of informal interactions with professors increases a student's interest and commitment to her career. Furthermore, interactions with professors to discuss academic issues and problems had a positive influence on their decision to pursue a field such as engineering (Karman 1973). Additionally, interactions with professors may influence a student's orientation toward scientific and scholarly careers (Phlean 1979) Professors can have an influential causal role in a student's educational aspirations, particularly her decision to attend graduate school (Pascarella 1991).

The role of student - professor interactions is strengthened when professors serve as role models for students and engage in social activities and interactions with them. For example, some studies indicate that in graduate education a student who has a relationship with a professor who treats them as a junior colleague (i.e. sets high expectations and gives them the support they need to realize these expectations) is more apt to complete a doctoral degree.

Therefore, the amount and quality of student - professor interactions in undergraduate education should not be overlooked. In addition to the many benefits outlined above, these interactions can provide the link many students lack that prevents them from visualizing careers in engineering.

## **4.2 Lack of Networking**

Networking is the establishment of strong, permanent relationships between the student and others. In academic terms, it is the formation of a support group, or network, of faculty members and peers. These networks provide the undergraduate student with the self-confidence needed to forge ahead in the student's academic and social lives. A combination of formal and informal interactions among faculty and peers are strong positive influences on a student's over-all self-image. They help to broaden the student's personal outlook and academic ability. Traditional advising gives the student little chance to gain these important faculty connections, and many peer opportunities are lost because the advisor does not support group activities between his or her advisees.

Personally knowing a professor or administrator has a significant effect on the student's academic self-concept. Pascarella and Terenzini (1991) indicate that the most powerful forces affecting student self-images stem from involvement in the academic and social systems of their institutions, particularly interactions with other students and with faculty. Retention rates of undergraduates increase in direct correlation with the amount of *out-of-*

*classroom* time spent in intellectual discussions with professors. When faculty-student *social* interactions are frequent, students will more readily stay in a field of study. It is believed that this is because these interactions cause an integration of classroom and nonclassroom experiences for the student.

Student's interactions with peers (for example, studying with other students, participating in a subject matter or special interest group, etc.) are also positively and significantly related to their academic self-image. A cohesive peer environment is extremely influential in a student's educational achievement. Frequent participation in college-sponsored activities also causes an increase in the student's educational development.

### **4.3 Lack of Guidance About Specialization**

Specialization is the selection of a program of study within a given engineering discipline. One significant problem with traditional advising is its nearly complete lack of influence in this important, and even critical, decision. Students tend to choose their specialty based on their experiences in only a few previous classes, not based on a careful study of the specialties themselves. Thus, in the student's decision to pursue or abandon a field of study, the primary factor be either a likable or a difficult professor teaching as little as one earlier class in that field.

Since, under the current system, the advisor's personal knowledge of the student's experiences and aptitudes is so limited, the advisor is unable to give the student the guidance and assistance needed to correctly choose a future specialty. Using a different approach, a mentor can have a great deal of influence over a student's decision in the area of career and specialization. The more time a faculty member, whether the student's formal mentor or not, spends with a student, and the better the faculty member knows the student, the greater the amount of information the faculty member can convey to the student, allowing a more informed decision. Spending time in a social atmosphere with one's advisees and students provides a professor with a higher probability of success in guiding the students into compatible majors, and through this, careers. This is particularly true for female students.. Komarovsky found that women who had engaged in more informal interaction with faculty during college had a higher level of interest in and commitment to a career (1985).

### **4.4 Lack of Exposure to Research**

With our current advising approach, too few students have the chance to become involved in real research. There are two main routes to involving undergraduate students in research, the summer research experience and year-round, or academic year, research. In the first case, many advisors do not inform their advisees about the different opportunities available for summer research. Also, few undergraduates are actually allowed to help with the

advisor's research during the semester, even though it is believed to be one of the strongest and most influential factors in students' decisions to enter graduate school.

Summer research experiences for undergraduates, too, have been promoted as motivational programs for instilling interest in graduate school and research careers. However, many specific concerns are not addressed in summer research programs. In spite of the fact that these summer experiences are research opportunities, in many senses, they may appear to be only a summer job to the participating students.

This may not be obvious in the context of the research environment; however, many technical, social, and economic aspects of the summer experiences are much like those of any other summer job. At the end of the summer, the student is divorced from the technical experience and the project technical monitors with whom they have worked. This can be contrasted with a year-round research experience, where the student has a greater chance to experience all aspects of research: proposal writing, literature searches; data gathering and experimentation, statistical analysis, report writing, conference presentations, and journal paper submissions. As a result, the students involved only in summer research only lack the ongoing, positive reinforcement which is indispensable for students considering graduate school and further research activities.

Also, a large proportion of the students entering into a summer research program have already decided to attend graduate school. The net result of this is a lack of attention being directed toward other students whose informational needs regarding graduate school remain unsatisfied. These students include those who are qualified to attend graduate school but are still undecided about doing it, and thus, they are unable to firmly commit; those who do not see the advertisements for summer research positions; and those students who have not yet firmly decided which subdiscipline on which to focus for graduate study. Furthermore, without the guidance of a faculty member, oftentimes the student is unable to locate and obtain a suitable summer position within a chosen subdiscipline.

#### **4.5 Adviser's Lack of Knowledge About Required Courses**

The practice of engineering is continuously evolving with the technological advances and changes being wrought in the business world. Along with these worldly changes, comes adjustments in a major's academic requirements. All too often students and faculty find themselves surrounded by unfamiliar grounds when it comes to selecting appropriate courses and course sequences. The ever-changing curriculum makes the students more dependent on the adviser's knowledge about suitable class requirements. Negligence on the part of the student or faculty may result in unnecessary credit hours and even a delayed graduation date.

In today's society it is important that the undergraduate chart his or her education on the basis of experience and development of interests. Within a collegiate environment a student may achieve this by developing a curriculum with interchanges to major sequences in other disciplines. Adjusting the curriculum to suit an individual's preferences is confusing and requires the help of knowledgeable advisors and faculty. The process of course selection is extremely important and is often undervalued in the current advising system.

#### **4.6 Mismatch of Advisees with Appropriate Advisers**

In the current advising system, many students are given advisers outside of their desired field of interest. This type of situation can be particularly detrimental to the undergraduate student. Advisers are given the responsibility to answer any questions the student may have concerning his or her particular area of interest. Without sufficient knowledge and education about the area in question, students may be misinformed about such things as: curriculum, scholarships, internships, and job opportunities. For example, a student going into engineering may be given an advisor specializing in Geology. In such an instance the advisor's ability to answer inquiries about engineering is greatly impaired.

Secondly, the knowledge and education level of the adviser are not the only considerations. A potential adviser must also be capable of addressing the specific needs of the student. In this regard, a combination of experience, background, and competence for the needs of the student is an essential element in making advising beneficial and successful (Soils 1992).

Thirdly, the matching of student and adviser can be accomplished in one of two ways. Incoming freshmen have a limited amount of experience with the faculty and advisers, which makes the selection process extremely difficult for the student to do on his/her own. In such an instance, a student should be assigned an appropriate adviser by knowledgeable faculty. The matching of advisers with students can be enhanced by using questionnaires, interviews, applications, past performance and/or similar interests. For those students with more experience, the student has several options: (1) allow student to pick an adviser by himself/herself; (2) Present a list of potential advisers to the student for selection based on student's needs or interests; (3) sponsor a mixer gathering of students to meet with advisers and allow everyone to get to know one another as a means assisting the student in the selection process (Soils 1992).

#### **4.7 Lack of Information About Graduate Schools**

The decision about a particular graduate school will affect the course of the students career and the students life. A significant problem with traditional advising is the lack of motivation and guidance about graduate schools. Within the current advising system the adviser's advice about the appropriate graduate schools may be bias based on his/her desire to recruit or keep students enrolled at their college institution. This ulterior motive may be detrimental to the individual student. A campus may have an excellent program in one technical area, and a only a mediocre one in another field. Graduate school requires a more personal investigation than does undergraduate school. A student needs to consider more than just the schools overall reputation. This careful examination of the school(s) in question often times requires the help of an adviser. Although the quality of a certain program may



change very quickly, it is the adviser's responsibility to convey the most accurate information possible to the advisee.

#### **4.8 Lack of Information About Academic Careers**

A career as a member of faculty at a major university is often surrounded by uncertainty and misconception on behalf of the undergraduate student. In many instances the student associates his/her professor as far superior than ones self. This idealistic view causes the student to perceive such a profession as "out of reach." It is pertinent that the adviser decrease the gap between the student's misconceptions and reality.

Academic careers process an abundance of opportunities for professional and personal development, but without proper knowledge of such advantages the student may not consider this as a career option. It is important that the undergraduate adviser inform the student of the many advantages associated with becoming a professor in the college environment.

#### **5.0 Needs of Advisees**

The development of an effective model of advising should reflect the "actual and perceived needs of students and faculty." These needs should be addressed in a systematic and efficient manner. The ideal college experience provides an environment with adequate counseling for students' needs and questions as well as an information transfer mechanism. Within the current advising system, many advisees are left with incomplete and unanswered questions about such things as academic guidance, troubleshooting, future academic offerings, paperwork guidance, career guidance, graduate school guidance, and professional guidance. The following section will enumerate the key points concerning such problems in the college advising atmosphere.

#### **5.1 Academic Guidance**

One of the primary objectives of an adviser is to assist in the development of a program of study that will most benefit a student's individual interests and career and professional development. Therefore, as an adviser, one must seek to recommend courses and minor programs of study that will complement a student's individual needs, based on one's interaction with the student, any particular interests the student expresses, and a careful consideration of curriculum opportunities. For example, too few undergraduate students pursue a formal minor or a dual degree even though experiences have shown that it is possible for a student to receive a dual degree in five years or less if an adviser works closely with the student to achieve a viable plan of study.

By becoming a dedicated adviser, one shifts the focus of academic advising from an “infrequent duty” to a “continuous responsibility.” Thus, throughout the year, the adviser must continuously inform the students of new course offerings, provide scientific publications related to the subdiscipline the student has chosen (or from a broader sampling if the student is as of yet undecided), and expose the student to “unpublicized practices,” such as substituting a graduate level course for an undergraduate elective. Essentially, the adviser will become an academic information resource and expose the student to a broader range of course offerings, including graduate coursework, if justified based on the advisee’s background.

There is an additional level of academic guidance in advising that is almost always completely lacking in the traditional advising setting. It is possible for an adviser to provide recognition for a student’s achievements. Too often, our best students never hear how we appreciate their efforts and how they contribute to the overall health and well-being of the university. Advisers can convey the feeling to students that they, and their academic achievements, are important to the university. Also, they can listen when students face academic difficulties and can provide guidance and perspective for students so that they feel better about themselves, are better able to cope with academic complexities, and can perform with a greater degree of confidence. These interactions and results can only be achieved when there is a good deal of familiarity between the adviser and student and there are open lines of communication and reasonable access between the two. All of these ingredients, which are so often missing in the traditional advising setting, can be provided with improved guidelines and models for advising.

## **5.2 Professional Guidance**

Once a solid academic path has been established and the student’s interests are clearly understood, an advising program should assist in providing professional knowledge and exposure to professional activities. This can include things such as internships at universities or government laboratories and tours of professional facilities. Students should also be given knowledge of ideas and research outside their home university. Summer internships and other research opportunities have been seen as one of the strongest motivating forces for attending graduate school. advisers can play a key role in identifying such opportunities and facilitating participation by students.

A key component of the program is that the adviser must actively seek professional and research experiences for students. The adviser is best suited to recommend a summer internship or research experience that will most benefit that student and foster his or her personal needs.

Furthermore, we believe that it is crucial that students learn about engineering research by being directly involved in the entire process of scientific and engineering discovery. While the primary mechanism for doing so is participation in a summer research program, a secondary mechanism is for each student to help with any funded research project that the adviser has during the academic year for approximately five hours per week. This

approach to the research dilemma should be carefully considered for all students, but especially if the student is leaning toward the specialty of the particular adviser. It should be noted that while the majority of the research is expected to be on an individual basis, there should be group meetings of participating students so that there is a degree of peer support and networking among participants. By doing this, the students will be able to actively participate in the research process on a continual basis during their undergraduate careers.

In addition, the students should be actively encouraged to take two additional steps, report on their work and see and hear reports of the work of others. Specifically, students should be encouraged to write, or participate in writing, a potentially publishable paper prior to graduation. Students may then have the opportunity to attend the conference where the paper might be presented. Thus, students will be more solidly involved in reporting on research results and participating in the professional dissemination of those results.

### **5.3 Career Guidance**

Adviser should provide career guidance and aid the students in their career development by serving as an informational resource. This includes items such as providing students with graduate fellowship applications; notifying students of the due dates for fellowship applications, the Graduate Research Exam (GRE), and graduate school applications; and assisting in the development and submission of these applications.

In order to increase student awareness of research careers, the adviser should obtain and distribute career guidance material and scientific publications such as that published by the National Science Foundation (NSF) and the American Society of Civil Engineers (ASCE). They should also assist students in resume development, meet with them to discuss extra-curriculum activities, and encourage participation in professional organizations. The goal of these activities is to complement other advising efforts designed to enhance students' graduate school, research, and teaching career pursuits.

Another major objective of the advising program is to increase student awareness of careers in academia. To do so, the adviser must offer information and guidance regarding the opportunities for university-level positions in teaching and research. This can easily be done by simply talking with the student about the different aspects of academic life and the added work of research.

### **5.4 Troubleshooting**

A common problem among many undergraduate students is the issue of troubleshooting. This may include dropping a course after the official drop date. In such an instance it important that the student is given accurate

information on how to resolve his/her particular problem. The adviser needs to be prepared to give knowledgeable information or know where to direct the advisee for further assistance if such a situation were to arise.

### **5.5 Future Academic Offerings**

Once an undergraduate student has reached a certain level in his/her desired field of study, the issue of future academic offerings becomes increasingly important. Often times upper-level curriculum classes are only offered at specific times during the academic year. It is essential that the adviser know when a class is offered so that the student's schedule is not off set due to inaccurate information about semester offerings.

### **5.6 Where to Go For Help**

Another major objective of the advising program is to increase the awareness of the students information options. In the advent that the adviser cannot answer the advisee's question, one should know where to direct the student for further assistance.

There are multiple steps that could be taken to ensure that the students realize their information options. These steps may include: sending out informative letters with the advisees' options, posting a list in dormitories, department offices, bulletin boards, and kiosks, and discussing possible options during advising sessions.

### **6.0 Resources of the University**

For any document, faculty member, or department to provide the breadth of information for a large institution such as North Carolina State University, it is essential that there be broad spectrum of informative resources available for reference. Accurate and accessible information is essential for effective advising. It is critical that all knowledgeable sources participate in the development and transfer of pertinent and accurate information.

Advisers should be knowledgeable about all university policies and procedures so a thorough advising discussion may take place. Such resources may include: the Handbook for Teaching and Advising, the World Wide Web, a telephone hierarchy, specialty organizations and programs, faculty, professionals, and fellow students. It is imperative that advisers be knowledgeable of these multiple sources of information and be skilled in how to use them.

### **6.1 Handbook for Teaching and Advising**

The loose-leaf Handbook for Teaching and Advising has been prepared by the Office of the Provost, along with the various administrative and service units of the campus. The handbook is specialized to suit the needs of the North Carolina State University faculty and administrators in their student academic teaching and advising activities. It is a compilation of the procedures and academic policies of NCSU along with information on services and support groups available to students and faculty. The objective of providing this informative handbook is to ensure the student's academic success here at North Carolina State University.

The Handbook is fully searchable on the World Wide Web at the following URL:

<http://www2.ncsu.edu/ncsu/provost/info/hat>

It is the official source for the most accurate and up-to-date information concerning topics in the hardcopy version. It will also give users the capability to download the entire handbook or particular section of interest.

## **6.2 World-Wide Web**

The World-Wide Web is one of the fastest growing technological advances of this decade. Information on a wide range of topics can be accessed from web pages. Currently, our university makes use of this technology and offers information about such things as:

- Academic Information and Colleges
- Administrative units governance
- Alumni Association
- Campus Life: Services & Extracurricular Athletic Activities
- Career Development, Employment, & Related Policies & Benefits
- Computing Resources
- Directories: People/ Departments/ Campus Boxes/ Off-Campus
- Library Services and Catalogs
- News & Information
- Outreach, Extension & Continuing Education
- Research

Although adequate information is generated from the current web page, even further information could be provided. This information could include professor evaluations and class grade distribution curves. Such information would provide the undergraduate student with a sense for the professor's teaching abilities and student comprehension of class material.

## **6.3 Telephone Information Hierarchy**

The telephone is probably one of the most accessible information highways. Virtually everybody has access to a telephone, which is why it so important that a telephone information hierarchy is provided to all students and faculty at our university. This hierarchy should include an information hotline. The hotline could serve undergraduate students with basic information concerning general academic and advising questions.

Additionally, this service needs an extremely thorough and accurate telephone index. This index could serve both students and advisers in case one must contact the other. Often times, the student directory has incorrect telephone and address information. This problem could be resolved if the students, themselves, could call the system and make changes as needed.

## **6.4 Specialty Organizations and Programs**

North Carolina State University offers extensive students services and programs. These on and off campus resource centers serve primarily undergraduate and graduate students. The programs provide confidential advising and consulting on a wide range of issues. Our university currently provides the following programs and services:

Counseling Center

Women's Center

University Transition Program (UTP)

University Undesignated (UU)

Academic Support Program for Student Athletes (ASPSA)

Chaplain's Cooperative Ministry

Disability Services for Students

North Carolina State Fellow's Program

Student Health Services

International Student Center

Student Legal Services

Mentor Program

Career Planning and Placement

Student Development

Student Leadership Center

## **6.5 Advising Czar**

Faculty with advising responsibilities will provide accurate information about academic procedures and regulations, graduation requirements, and course prerequisites. If an advisee has a particularly difficult or unusual question, then adviser may refer the student to the Coordinator of Advising. Additionally, the Coordinator of Advising holds the following responsibilities (Bingham 1995):

1. assigning, training, and supervising faculty advisers;
2. providing up-to-date, print course and curriculum information for advisers and students;
3. reassigning to another adviser any student who requests; (4) assisting any student who wants to major in the coordinators area of study but is ineligible at the time to transfer into it. Students in this category keep there adviser in the department in which they are enrolled but consult additionally with the coordinator of advising for the department offering the curriculum in which they wish to enroll. Whenever appropriate, the coordinator will advise the student that they should consider alternative curricula.

## **6.6 Professionals**

Another possible information resource would be the professionals of the community. These professionals can help answer undergraduate student's questions concerning things such as co-op jobs, internships, and professional careers. Since the professionals work in the environment in question, they may be better prepared to answer such inquiries.

Additionally, the student/professional relationship gives the student an opportunity to see what he/she may be interested in after completing their academic education. This opportunity to discuss issues of interest may impact the students choice of specialization.

## **6.7 Faculty**

The accumulation of knowledge occurs by a process of incorporating new experiences with past experiences. The most effective professors and faculty are those who are best able to bring these two things together and help the student make the unfamiliar more familiar. Faculty can serve as a "living conduit" for information flow. A living teacher is more interactive and personal than a non-human source of information. Students can relate and ask questions more effectively to a human source. "The success of a teacher is principally a function of his/her abilities to capture and maintain the interest of the learner, to motivate the student to learn, and to package the information in its most understandable form" (Smallwood, 1993).

## **6.8 Students (Undergraduate/Graduate)**

One of the most important information resources on campus are fellow upper level undergraduate students and graduate students. Over a period time these students become familiar with university policies, professors, and academic classes. The student-student relationship is one of extreme importance. Since students are on the same level they can relate to each other more effectively than they can with any other information resource. This one-on-one relationship supplies the advisee with much needed advise on a more personal level.

## 7.0 Qualities of Advisers and Students

Advising does not always come easily, but certain attributes in both the student and the adviser make the process easier. Table 1 is a list of qualities for both students and faculty; it is based on a similar table developed for employer-employee mentoring relationships by Soil and Materials Engineers (Soils, 1992). These qualities help both the adviser and the student throughout the relationship, but note that many of these qualities are also greatly enhanced by the advising process.

Table 1: Qualities of Students and Advisers

<b>ADVISER</b>	<b>STUDENT</b>
Competent	Hard Worker
Experienced	Inquisitive
Approachable	Determined
Candid	Committed to Growth
Available	Self-Starter
Encouraging	Bright
Good Listener	Good Listener
Personality Fit	Personality Fit
Position of Influence	Realistic Expectations

## 8.0 Goals, Relationships, and Responsibilities of Advising

As discussed earlier, personal advising can, in one sense, be viewed as a planning-sensitive approach to advising. Advising, as described here, is intended to serve as only one of several means available to students in their professional development. In view of this, the following three observations should be made: 1) the advising experience extends beyond interactions with a adviser; 2) advising should be distinguished from training; and, 3) the objectives of advising are academic, professional, and career enrichment.





## 8.1 Advising Goals

Since extra guidance for the student is seen as beneficial, a formal plan of advising must be developed, and goals must be defined. At NCSU, we have established goals for the advising program in three primary areas: academics, professional development, and career guidance. By meeting these goals, we hope that students will be better prepared for their careers as engineers.

A key goal in the advising process is to accommodate undergraduate students at all levels in their academic career. As a student moves through their college experience their needs change. Therefore, the advising process must also change to better assist the advisee in their decision making process. As students mature from freshmen to seniors in college their satisfaction levels seem to increase. This increase of satisfaction may be attributed to becoming more familiar within the college atmosphere. Certain programs are provided for the freshmen during their, sometimes difficult, transition phase. Such programs include freshmen orientation, the University Transition Program (UTP), and the University Undesignated (UU).

A primary goal of advising is to broaden the academic development of the students. A student needs to be allowed to develop in many ways, not only in an “upward” direction by progressing through an academic program of course instruction. It is just as important to the student to have lateral, or static, development through which they gain in responsibilities and affiliations as well as enhance their academic performance. The intent of advising is to create a “well-rounded” and informed individual. Students involved in advising programs often gain certain attributes not seen in their nonmentored peers, such as greater academic satisfaction, broader technical and tacit knowledge and perspectives, and more developed communication skills. These attributes aid in creating enhanced performance in, and loyalty to, the engineering profession.

Another goal of this program is to provide an academic advising network. There are six basic types of networks that concern an undergraduate: interactions with peers, upperclassmen, graduate students, a faculty adviser, the general faculty, and professionals. These networks are crucial in the academic, social, and professional development of the student. They also provide the building blocks for making new contacts in the worlds of business, research, and academia.

We hope that each of these goals will help us achieve another academic objective, an increase in the number of students completing bachelor of science engineering degrees. Furthermore, as more of these qualified students graduate, we also hope to see an increased number of students pursuing advanced degrees.

Advising not only involves the interaction between the adviser and student, but includes other things such as professional forums, meetings, and interaction with peers, graduate students, and faculty. One goal of our program

is to increase a student's chances to access these various potential advising resources, in addition to the base of advising that is provided by a faculty member.

Another goal of advising is to find ways to increase student participation in research programs as undergraduates, both through summer research experiences and through the adviser's current research projects. It has been shown that *those students who participate in research are more interested in pursuing graduate education, and they have a higher sense of commitment to and sense of belonging in their chosen field.* In a recent survey conducted by Purdue University on entering graduate students at various universities, semester or academic-year research was ranked as very important in the decision for people to enter graduate school for about 75% of all respondents, and between very important and important by over 90% of the respondents. Summer research was also highly ranked, although not as high as year-round research (Compton, 1994).

The final goal of advising is simply to provide students with more information about graduate school and careers in research and as college professors. This can be facilitated through the distribution of publications and other information concerning these and other topics. Also, frank discussions about these topics are encouraged between adviser and students. This is important because of the surprisingly large number of students who truly do not have enough information to make well-informed career decisions at key decision points, like the completion of an undergraduate program.

## **8.2 Advising Relationships**

Relationships are the backbone of a strong advising program. Through them, a support network is able to grow and flourish throughout the college. The relationships involved in this network are of four basic types: peer, graduate-undergraduate student, adviser-student, and general faculty-student relationships. Figure 2 depicts the complexity of the interrelationships between these groups, which are described in more detail below.

Figure 2: Advising Relationships

### **8.2.1 Peer Relationships**

The first relationship exists among undergraduate students and evolves from peer advising. In order to promote peer advising, the faculty adviser should encourage his or her students to work together where possible. This encouragement can come from simply giving out a list of phone numbers and addresses or from planning and/or encouraging the students to participate in various group activities. The upperclassmen will be able to answer many of the questions formulated by the younger advisees. This interaction may initially come through organized activities, but hopefully the contact will grow and develop as the students take the lead. Another helpful activity is for the students to meet with and share ideas with other advisers' students.

### **8.2.2 Graduate/Undergraduate Student Relationships**

The second relationship involves interactions between graduate and undergraduate students. To promote this type of advising, graduate students who work with the faculty adviser should be encouraged to meet and work with the undergraduate students. The adviser should encourage panel and informal discussions between the two groups in which specific concerns, can be discussed. These concerns might include choosing and applying to a graduate program, facing social pressures, conducting research, and other topics of interest to the undergraduates.

When possible and appropriate, efforts should be made to coordinate a graduate student's research with the ongoing research of an undergraduate student during the academic year. Relationships of this sort are beneficial to both the undergraduate and graduate student. Both students will learn and grow as a result of their exposure to the other. Furthermore, the undergraduate student will receive much needed, first-hand information on what it is like to be a graduate student and, hopefully, will realize that graduate school is an attainable goal.

### **8.2.3 Adviser/Student Relationships**

The third relationship is between the adviser and the undergraduate students. The adviser is expected to take a personal interest in each student's academic and professional development and to facilitate the broadening of the student's experience by providing information, introducing the students to professionals, serving as a role model, giving support and encouragement, and finding other ways of significantly contributing to the student's academic and professional pursuits. In this regard, the adviser fills the roles of teacher, advisor, confidant, and sponsor. advisers can play a very important role in these students' lives if the relationship is sturdy. In the aforementioned Purdue study, approximately 70% of all respondents believed that advisers played an important role in bringing students into graduate school (Compton, 1994).

Since there are many different stages to the relationship, different behaviors and responses will be needed at different times. During the early stages of the advising relationship, a adviser must be the one to take control. The adviser should exercise a leadership role through coaching, prescribing, and persuading techniques. As the student begins to develop, he or she will need less direction from the adviser.

At this time, it will be up to the adviser to begin to change advising techniques to slowly become more of a collaborator or sounding board for the student's ideas. Also, the student should be flexible so that the adviser, who is trying to vary his or her advising style to suit the student's needs, does not become discouraged. Since each person is different, the pace of these changes would have to vary for each student.

Ultimately, the goal of the entire advising program is to encourage the development of students so that they are competent, self-motivated, self-disciplined, confident, and autonomous. This is why flexibility is so important in the relationship. At the same time, the student must make choices for himself, such as when less *direction from*, and more *collaboration with* the adviser is required. This will help to make the relationship much easier on both of the student and the faculty adviser.

### **8.2.4 General Faculty/Student Relationships**

A fourth relationship is the rapport between the general faculty and the student. This should be emphasized through student attendance at faculty discussions, involvement in professional organizations, and participation in a continuous research project, to the extent possible and feasible, throughout the year. Through these and other similar actions, the students will become involved in, and comfortable with, the university process.

### **8.2.5 Professional/Student Relationship**

Finally, a fifth relationship should exist between the professional and the student. This relationship can be created through job experiences such as coops and internships. The rapport between the professional and the student is especially important. This relationship provides the undergraduate a chance to ask questions and experience some of the job opportunities available once he/she graduates.

This relationship may also be established through university held career days. On such days information tables could be set up to accommodate different types of careers available to the student once he/she obtains a bachelors degree. This type of experience gives the student an opportunity to see the different types of careers associated with a particular field of interest. These seminars could also entail applications for internships and coop jobs.

Additionally, a special career day could be held for seniors. This career seminar could entail such things as distributing applications and setting up or holding interviews.

### **8.3 Levels of Information Transfer**

Within a University setting there are multiple levels of information flow. Each level holds essential information concerning important academic issues. The different levels include, among others: the university, the college, the individual departments, and the faculty. For example, the university initiates freshman orientation, the college generates EIT information, and the individual departments help with curriculum issues.

### **9.0 University Advising Models**

"The effective assessment of an advising model should reflect a sound methodological approach. Such an approach strengthens the argument that what is occurring is systematic, objective, and that it enhances the quality of the service rendered, in this case, university-wide advising. It is critical that sufficient resources are allotted to not only initiate the quality advising model, but to sustain it as an ongoing activity" (PQT 1993).

"The assessment effort needs to be consistent across campus. The reliability of a model breaks down when each department or college defines the time and manner that assessment will occur. It is the responsibility of those who monitor the quality effort at NCSU to assure that assessment will occur. For example, all departments will be expected to adopt some combination of surveys; focus groups, interviews, and town meetings. In addition, both graduate and undergraduate students will be part of the dialog about advising" (PQT 1993).

"Effective assessment should ultimately produce a feedback-loop which allows an institution to evaluate the efficacy of its efforts. This evaluation can be both qualitative and quantitative. Information can be obtain

concerning the student and faculty perceptions of the quality of advising. If this done periodically, the information can be utilized to make adjustments in the model" (PQT 1993).

"Ultimately, an effective model of advising will produce easily measurable outcomes. Some outcomes, like decline in drops and adds, are predictable while others might not be as obvious. If the model works and is assessed/evaluated, then graduation rates may increase, students may become motivated to select outstanding advisers, and resource allocation should be based upon those areas which demonstrate the most success" (PQT 1993).

### **9.1 Official Office Hours**

In the advent that a student needs to talk to his/her adviser, it is important that the student know when and where to get in touch with the adviser. Advisers need to post the times in which they will be available for their advisees. The schedule should be clearly displayed next to the adviser's office door. Sign up sheets should also be made available so advisees can schedule an appointment with his/her adviser. During this time an advisee can come in with any questions or comments he/she may have. If an adviser is not available during scheduled hours, then the adviser should leave a note indicating when they will return.

### **9.2 Seminars**

Seminars can be particularly beneficial to all undergraduate students, graduate students, and faculty. Seminars can be a means of information flow between undergraduate students and graduate students, faculty, and professionals. This type of meeting provides the students with the opportunity to expound on the most up-to-date knowledge available.

Seminar topics may include career and professional development, research methods, and academic offerings. This gives the student a chance to ask questions in a more informal setting and provides the student the opportunity to gain knowledgeable information on issues of concern. Additionally, the leader of the discussion may be better suited to answer certain questions that the adviser and/or university are not familiar with.

These seminars should be lead by a knowledgeable person in the area of discussion. This process will serve as a springboard for addressing special concerns, asking different questions, and entertaining innovative solutions. By effectively holding seminars more efficient and accurate information.

### **9.3 Mandatory Registration Class**

The registration period is an especially crucial period for the student during the academic year. Every college student must decide the curriculum he/she is going to follow. Once this decision is made, a sequence of classes must be chosen that fit into the desired field of interest. This decision process can be confusing in the advent of combined minors and majors. The solution to this problem can be found through the offering of mandatory registration classes. These classes would be held at the beginning of the registration process. During this time a brief explanation of the current registration process will be provided and students can then proceed to ask questions about such things related to this process. Additionally, multiple student advisers will be present for individual advising for a one-on-one informative meeting.

As the student evolves from freshman to senior, there needs also change. A freshman undergraduate student may need more individual and more frequent advice than does a senior undergraduate student. This problem should be realized and different options should be given to the two separate classes. Once the system has been designed, the student can then attend these seminars and receive all adequate information concerning curriculum and registration. If questions still arise after the mandatory advising class, the student can then set up an individual appointment with his/her adviser.



## 9.4 Optional Advising

With the current advising system, professors are required to provide effective advising skills to advisees. Often times professors do not possess necessary expertise and motivation to adequately advise the students of a university. All advisers must appreciate and enjoy the rewards that accrue from advising. Once an adviser is assigned the position of adviser they must consider it an integral part of their academic responsibility.

Occasionally, a professor does not have the desire to hold the responsibility of advising undergraduate and graduate students. Within a new and improved system of advising, advisers should not be required to provide advising techniques when he/she does not feel the desire to do so.

## 9.5 Mentoring Program

Mentoring has been defined as "guidance from a person with experience, perspective and distance. Also, mentoring includes confidentiality, trust and mutual respect between the mentor and the protégé. Mentoring can include aspects of apprenticeship, networking, coaching, tutoring, advising, job rotation, orientation, and fast-track development programs, but is generally more than these" (SME, 1992).

The primary goal of mentoring at the university level would be to ensure the academic as well as future success of the undergraduate student. Mentoring, in the broadest sense, not only involves the interaction between the mentor and the advisee, but also other things such as information about undergraduate and graduate school, professional and career development, seminars and personal interaction between faculty and student, and finally one-on-one inter-relationship between the mentor and advisee. In view of these goals three clarifications should be made about mentoring (Soils 1992):

1. in the broadest sense, the mentoring experience extends beyond interaction with a mentor;
2. mentoring should be distinguished from training, and;
3. the objective of mentoring is academic and professional enrichment.

In correspondence to the previous comments a primary goal of mentoring is to broaden the academic development of the students. A student needs to be allowed to develop in many ways, not only in an "upward" direction by progressing through an academic program of course instruction. It is just as important to the student to have lateral, or static, development through which they gain in responsibilities and affiliations as well as enhance their academic performance. The intent of mentoring is to create a "well-rounded" and informed individual. Students involved in mentoring programs often gain certain attributes not seen in their nonmentored peers, such as greater

academic satisfaction, broader technical and tacit knowledge and perspectives, and more developed communication skills. These attributes aid in creating enhanced performance in, and loyalty to, the engineering profession.

In addition to experience and exposure level, a potential mentor must also be competent in addressing the specific needs of a particular undergraduate student. In this regard, a blending of experience, background, and competence for the needs of the student is an essential element in making the program beneficial and successful.

## **9.6 Mandatory Comprehensive Adviser Training**

Effective advising can only occur when advisers are knowledgeable about university curriculum requirements, policies, campus resources, and career planning. Additionally, it is imperative that advisers effectively develop adequate communication skills necessary to assist in a productive adviser/advisee relationship.

An initial training seminar should be required for all unskilled faculty, and all skilled advisers should be required to attend refresher seminars throughout the year. The adviser seminars should be designed to give the faculty (future advisers) and the current advisers knowledgeable information concerning effective advising, degree requirements, accurate university policies and student programs, and innovative ideas on how to better advise students.

The initial advising seminar should be more thorough and cover such topics as: Interpersonal communication skills, active listening skills, and nonverbal behavior; information about university support services and advice about when it is appropriate to utilize these services; information about general education requirements; discussion of the relationship between about careers and curricula; information about specific academic policies; and sensitivity to the needs of diverse student populations (PQI, 1993)

## **9.7 Continual Monitoring and Evaluations for Quality Advising**

The integrity of an academic university necessitates that each department define and improve upon their own advising structure. These improvements can be made through the continual monitoring of professors and advisers. The monitoring procedures may consist of advisees completing an adviser survey evaluating the adviser's individual interests, motivation, and expertise in the performance of particular advising roles. The surveys could then be evaluated and judgments could be made upon improving individual adviser skills.

## **9.8 Departmental Advising Center**

Often times students find it difficult to locate much needed information, this is why it is important that a centralized information center is available for the students and faculty of the university. This information center or advising center must make itself known to students and faculty through advertising strategies such as: hand-out material, university newsletters and newspapers, and fliers posted on bulletin boards and kiosks. A successful center must create the perception that they possess the information the students and faculty desire. Additionally, they must greet people in a friendly manner and position themselves in convenient location for students and faculty to easily access pertinent information.

Advising centers, like successful businesses, have to involve themselves in new and innovative marketing principles. Certain factors such as advertising, service, image, location, and innovative problem solving strategies are essential for the success of advising centers in universities.

## **9.9 Rewards System for Excellence in Advising**

Good advising requires the expenditure of time and effort - to develop a one-on-one relationship with students. It is well known that when it comes to tenure decisions and promotions many colleges penalize faculty who invest significant time and creative energy in undergraduate instruction. Star researchers advance rapidly; star teachers advance at a much slower pace, if at all, and may simply be denied tenure.

The undergraduate student is definitely the bearer of consequences for the current practices in rewarding such research efforts and penalizing faculty for their outstanding advising efforts. Administrators must assess the direct effects of these practices on the willingness of faculty to devote time and effort to quality advising.

In order to alleviate this problem, non-threatening faculty development opportunities should be provided in addition to a recognition and rewards system for excellent advising. This system must include both non-monetary and monetary rewards. Monetary recognition may include a cash award for outstanding advising services. Non-monetary recognition may include such things as an awards ceremony and/or a permanent plaque stating the names of the outstanding advisers.

## **10.0 Adviser Advising Models**

There is no single best method for advising. What works best for one individual does not necessarily work best for another. This fact is why there must be alternatives within the advising system. Good advisers typically employ a variety of methods, each tailored to the individual advisee's needs and expectations. Excellent advisers share a general understanding of the advising process and direct their efforts accordingly.

## **10.1 Adviser Specializing in Course Selection**

One of the most important factors in a student's college career is his/her sequence of course selection. With every major there is a strict set of academic requirements that must be completed. Although these curriculum requirements are set up in an orderly fashion, class selection can become confusing when minors and double majors are a factor. Often times advisors are not knowledgeable enough in this area to provide adequate information and advise to efficiently select the proper sequence of classes. It is important that an adviser can direct the student along a path which provides the student with a timely graduation date.

A solution to the problem of class selection would be to train an adviser specially suited to deal with curriculum adjustments. This adviser would be all-knowing in the specialty of course and curriculum modification. Students with multiple majors and minors could count on accurate advice on such issues.

## **10.2 Adviser Specializing in Graduate School**

Education is the most powerful intervention in a student's life; graduate school not only provides role models for the students, it also spurs intellectual stimulation and career reinforcement. It is imperative that a role model specializing in graduate degrees be provided to the undergraduate students of a university. This type of adviser could counsel the student on what the best suited institution for his/her field of specialization would be. Additionally, the graduate school adviser could also give information concerning financial aid, grants, fellowships, and career opportunities available with a graduate degree.

The establishment of graduate advisers could sharpen the recruitment of student to pursue a graduate degree. The adviser could supply encouragement to undergraduate to pursue a research oriented learning experience; develop ties between graduate schools and undergraduate institutions; and create a listing in which graduate students and schools can find each other.

## **10.3 Adviser Specializing in Career Development**

One of the main problems with today's advising system is the lack of adequate career counseling provided by the undergraduate student's adviser. The problem can be alleviated by training a faculty or a practicing professional to provide accurate and knowledgeable information on such topics as: available career options, accessible career opportunities, co-op jobs, and internships. This type of advising could provide the student with a sense of understanding about future goals and expectations. This may also help the student realize what he/she may want to specialize in.



## **10.4 Advising Options**

Throughout an undergraduate student's academic career many questions arise concerning a wide range of fields and topics. All too often the student is faced with asking the advice of a faculty member with little or no knowledge of the question at hand. This fact makes it difficult for the student to get a well educated and accurate answer. The solution to this problem is to give the advisee different adviser options for different topics of discussion. For example, if a student has a question about certain job experiences, then one should be sent to a professional. If a student has a question about university curriculum or policies an assigned adviser would be appropriate. On the other hand, if a student needs to know about a certain class and its demands on a student, then the advise of an undergraduate or graduate student with prior experience with the class is adequate.

The goal of advising is to give the student accurate and knowledgeable information and to answer questions as they arise. With the current system, one central adviser may not have the education in the area in question. It is important that the university provide the means for students to acquire desired information. By assigning faculty, professionals, and undergraduate/graduate students advising responsibilities, student can have their questions answered to the fullest extent.

### **10.4.1 Faculty**

Faculty can provide information for a wide range of information concerning academic and career oriented topics. It is crucial for the success of students that faculty are dedicated to their work as teachers and advisers. The development of these two focal points for faculty are keys to the success of the student at North Carolina State University.

Every regularly-enrolled student is assigned a faculty member for academic advising. Academic advising responsibilities are assigned to most faculty members as a regular part of the duties for which they are appointed and evaluated upon.

Although students have the primary responsibility for planning their programs, faculty advisers are expected to (Bingham, 1995):

1. be available for conferences at appropriate times and places about which their advisees have been informed;
2. provide accurate information about academic regulations and procedures, course prerequisites, and graduation requirements;

3. assist students in planning academic programs suited to their interests and abilities and their career objectives;
4. discuss with their advisees appropriate course choices in fulfilling curriculum requirements as well as possible consequences of various alternative course choices;
5. inform their advisees when their proposed course selections conflict with University academic or curricular regulations;
6. assist advisees with following proper procedures for such things as exemptions to the course drop deadlines, auditing a course before or after taking it for credit, taking a course using the credit by examination policy, registering for 19 or more credit hours, registering for Cooperative Raleigh Colleges interinstitutional courses, or repeating a course previously passed;
7. refer their advisees for special testing or counseling as needed; and
8. assist their advisees in considering the appropriateness of academic adjustments where these become necessary in cases of serious injury or illness.

Familiarity with the type of information provided by the Handbook for Advising and Teaching is essential to effective the advising of undergraduate students.

### **10.4.2 Professionals**

The professional has many ways to enhance the education process both on and off campus. On-campus the professional can serve advisory boards and committees and provide substantial insight to the faculty on curriculum and program matters. In fact, professionals may actually be better suited than faculty for teaching design and case study courses. However, the role of the professional should not be limited to only these types of courses. An exceptionally innovative mode of participation is in cooperative, team teaching of courses where the faculty and the professional work together in the classroom (Gedney, 1995).

Professionals need to play a more active role in defining skills, knowledge, and abilities to graduate and undergraduate students. The practice of a profession is quite diverse, it is important that the opportunity of a well-rounded educational experience be offer to the student.

Off-campus, professionals can also play important roles in support of undergraduate student education. Possibilities include: student and faculty internships, co-operative education programs, hosting field trips, and supporting off-campus student chapter activities (Gedney, 1995).

### **10.4.3 Upperlevel Undergraduates and Graduate Students**

Since fellow undergraduate students share the same types of on and off campus experiences, the upper-level undergraduate student can provide information to fellow undergraduate students in a comprehensive and understandable way. The undergraduate student can provide other students with pertinent information concerning curriculum and classroom experiences. Actual experiences are more familiar to upper-level undergraduate student than to faculty and advisers.

By contrast, graduate students can also be useful in transferring information concerning graduate school opportunities and experiences. Research keeps the graduate student's knowledge accurate and up-to-date and potentially interesting for undergraduate students interested in similar areas.

### **10.5 Group Advising**

With the traditional advising system, the advisee/adviser relationship is established through one-on-one contact. This type of contact works well for some students, but it does not work as well for others. Occasionally, a student may wish to have more informal advising techniques provided; in this type of situation group advising is an excellent option. Group advising can be beneficial to all undergraduate students, particularly those who are not comfortable with one-on-one contact. This type of advising gives the student a chance to get acquainted with the adviser before starting actually building a relationship with him/her.

Additionally, group advising gives incoming students a chance to meet fellow students and provide the student with a chance to build the student/student relationship. Since a larger number of students offer a more diverse question and answer session, the information flow is increased dramatically. This increase provides the student with more information than would have been provided with one-on-one advising.

### **11.0 Technological Advising Models**

Accurate and accessible information is essential for effective advising. This information can be located in academic policies and procedures and students' academic records. The majority of this information can be found in both hard copy and electronic formats. It is imperative that advisers possess the ability to make use of these multiple sources and are skilled in how to obtain and transfer desired information.

Advisers should be aware of university policies and curriculum requirements. Advisers should also be knowledgeable of the university's organizational structure and be able to refer advisee's to appropriate sources for support and information. All standard information can be obtained through the use of technological information systems. Advisers must have enough experience with such information systems so they may be able to direct the student to the most feasible solution resource.



## 11.1 Telephone Registration

Currently, many universities make use of telephone registration. This type of registration system makes semester planning much more convenient for the college student. Registration is conducted by using the Telephone Registration Access to Computerized Scheduling (TRACS) system. This system allows students to use any touch-tone telephone to register for classes. A *Schedule of Courses* is available each semester prior to the registration period. The Schedule contains all necessary instructions for accessing the system and completing registration.

Prior to accessing TRACS the student is required to go for an advising session with his/her adviser. The adviser will proceed to help with any academic questions the student may have in addition to providing the student's personal identification number (PIN). The PIN is a randomly generated four digit number assigned to the student each semester to enable access to TRACS. This number changes each semester to ensure confidentiality and it also requires the student to set up an appointment with their adviser.

## 11.2 Web Page

The World-Wide Web is one of the fastest growing technological advances of this decade. Information on a wide range of topics can be accessed from web pages. Currently, our university makes use of this technology and offers information about such things as:

- Academic Information and Colleges
- Administrative units governance
- Alumni Association
- Campus Life: Services & Extracurricular Athletic Activities
- Career Development, Employment, & Related Policies & Benefits
- Computing Resources
- Directories: People/ Departments/ Campus Boxes/ Off-Campus
- Library Services and Catalogs
- News & Information
- Outreach, Extension & Continuing Education
- Research

Although adequate information is generated from the current web page, even further information could be provided. This information could include professor evaluations and class grade distribution curves. Such

information would provide the undergraduate student with a sense for the professor's teaching abilities and student comprehension of class material.

### **11.3 Computerized Advising**

Although most universities provide students with printed guidelines and reminders, but keeping track of details can become a complex problem for students who make long-range plans for their overall academic programs in addition to scheduling individual courses each term.

In response to such problems, many universities have begun to use computerized degree audit systems for use by the adviser when conferring with students. Such systems store information about the major and minor requirements of academic programs, general institutional requirements, special programs, allowable course substitutions, course prerequisites, and transcripts complete with up-to-date tracking information on each student.

Many of the systems must be accessed by the adviser to generate the needed information, reducing some of the time saved by the original implementation of the computer system. One reasonable solution to this problem is to allow students to access the desired information from the database.

Such a student-controlled system has been implemented by the College of Education at Kent State University for answering simple questions from undergraduate students in the College. The system was designed to accomplish the following:

1. decrease the amount of time needed for students to obtain answers to basic questions;
2. significantly reduce the load of many counselors; and
3. allow counselors to spend more time with difficult and complex student concerns

Although advisers will still be available for in-depth questions, the "Counselor" advising system was developed to answer some basic questions and produced to be an easy-to-use information source (Milheim, 1989).

### **11.4 Kiosks and Bulletin Boards**

Kiosks that are set up sporadically throughout the campus can be an excellent source of information flow. Kiosks set up in high traffic areas provide the students with information without making them go out of their way to find it. Fliers and posters can be made up quickly and easily. This type of information transfer provides the students with easy access to accurate and informative information.

Additionally, bulletin boards can serve as a similar source of information. Departments can set up bulletin boards throughout the building to provide information about the specific field. Informative data about curriculum, coop opportunities, job opportunities, and any other pertinent information.

## **12.0 Summary**

Throughout this report the focus has been on information flow and undergraduate advising relationships within the university. Our research has focused on defining and evaluating the needs and expectations of the undergraduate advisee concerning the advising process. Additionally, this report endeavors to produce a resource for information flows within a university.

One of the most crucial aspects of a undergraduate student's academic career is the process of information flow. Without the accurate and accessible information the link between the university and the student is severed. It is essential that the student is provided with multiple informative sources to answer any question he/she may have. This report provides resources that are currently available within the university in addition to possible new information highways.

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