

# Outline for Comprehensive Career Plan

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My Fellow STEM Scholars,

It is urgent that you start planning not only what classes you will take next semester and the following semester, what you will be doing next summer and the following summer, but much more fundamentally, what you would like to do over the next 10-15 years.

This may sound crazy to you, but we know (from lots of experience) that many professionals do not plan well and far enough into the future. As a result, they are far too often not adequately prepared to take advantage of the many opportunities that come their way.

The purpose of getting you to write a Comprehensive Career Plan – one that you update 1-2 times per year – is to get you seriously and realistically thinking about what you would really like to do short- and long-term.

We know that you will change your plan (perhaps often), but it is still important to start writing your plan. You simply cannot start soon enough; and procrastination can result in missing big opportunities. By starting now, you will (if done properly) inevitably see that there are pieces of your future vision that have not been well thought out.

For those of you that feel, “I really haven’t got a clue about what I want to do,” we understand, join the bunches of individuals that have the same feelings. In short, this exercise will serve as a useful mechanism to get you started seriously thinking about your future. A mentor of mine taught me:

**“Time is precious...plan your work and work your plan.”**

This motto has served me well. I have found that when I have deviated from it, I run into “problems/issues.” Don’t deviate!

## START PLANNING NOW

Now is the time to start planning. If you wish to work with a surgeon, start planning now! If you wish to work at NASA, start planning now! If you wish to work on sports medicine, start planning now! If you wish to work in any of the following cutting-edge areas:

lithium-ion-phosphate battery technologies for electric vehicles,  
self-sufficient (carbon neutral) buildings,

energy grid devices and security,

green biofuels,  
efficient cost-effective solar cells,  
alternative fuel sources,

advanced supercomputers,  
cognitive radio technologies,

regenerative medicine (organ growth),  
cell-targeting medicine,  
medicine and nano-materials to fight cancer,  
early disease diagnosis,  
DNA sequencing,  
brain-controlled prosthetics,

nano-technology,  
spintronics-based devices,  
massive storage devices,

advanced robotic systems,  
advanced transportation systems (e.g. high-speed rail)  
hypersonic vehicles,  
air traffic control,  
advanced armour,

real-time language translation,  
content-rich mobile libraries,  
interactive teaching environments,

then you MUST START PLANNING NOW!

*NOTE 1: FUNDAMENTAL ASSUMPTIONS*

In what follows, we make two fundamental assumptions:

- (1) Anything worthwhile requires hard work!
- (2) Loving what you do is wonderful. (Try to speak to people that really loves what they do!)  
If you can work on something you think is cool, then you are much more likely to love what you do! I am constantly working on things that I very passionate about!

## **GUIDELINES**

Length:	Would like to see 10 pages or greater
Format:	Single spaced, 11 pt fonts, Times New Roman
Narrative Style:	First Person
Planning Period:	10-15 Years
Update Schedule:	This statement should be updated by you each semester (minimum).

## **OUTLINE FOR COMPREHENSIVE CAREER PLAN**

Most of the following topics should be addressed within your Comprehensive Career Plan.

### **1. Summary of Goals and Objectives**

#### TECHNICAL AREA

What would you like to work on in the future? Why?

Where would you like to work? Why?

#### *NOTE 2: SELECTING A TECHNICAL AREA*

First and foremost, it is important for you to pick a technical area that you are truly passionate about. It is also important to be a bit pragmatic. If you are the only one on the planet that is passionate about the area, then you better be *extra careful!* It may be hard to pay the bills. For pragmatic reasons, therefore, it is important to try to balance your passions with finding an area that will be around and that society will value for a long time. If you are intent on making AAAs, make sure that you understand what it will really take to compete in the AAA-making market. You do not want to let your passion blind you.

If you were adamant on becoming the next Einstein (in physics) or Beethoven (in music) or BBB (in sports) or CCC (in basket weaving), I would strongly suggest that you (1) think it through carefully, (2) generate a detailed plan, (3) try to be realistic and pragmatic, and that you (4) have back up plans.

If you are not willing to generate a comprehensive plan then you are not very serious about your future!

#### *NOTE 3: GOALS AND OBJECTIVES*

Goals may not be strictly measurable or tangible. They are typically more generic than objectives and involve longer planning periods. Objectives should be measurable and tangible. They are typically more specific than goals and involve shorter planning periods.

What are your professional goals?

What are your professional objectives?

Don't get bogged down with the language. Try to provide the short- and long-term goals/objectives. The more specific you can be the better!

EXAMPLE

In the short-term (5 years after BS) you may wish to earn your MS and PhD and to work at Lockheed Martin to gain experience with cutting-edge defense work. In the long-term (10 years after BS) you may wish to have your own defense contracting company.

Many students express a desire to have their own company. While we'd like all of you to have your own company one day, it just doesn't happen. It takes planning – lots of planning.

*NOTE 4: GENERAL GOALS AND OBJECTIVES*

While the focus of the comprehensive career plan is on your career, we also want you to think beyond the career; e.g. happiness, family, where you live, how you live, etc.

GENERAL LIFE GOALS AND OBJECTIVES

Given the above,

What are your life goals?

What are your life objectives?

In what follows, you should do your best to relate the answers below to your short- and long-term professional/life goals/objectives.

**2. Current Status**

EDUCATION

What coursework have you completed to date? What are you prepared to do? What is missing? What coursework are you looking forward to? Why? What will it permit you to do?

*NOTE 5: YOUR COURSES AND SOLVING REAL-WORLD PROBLEMS*

Far too often, students do NOT connect what they learn in courses to real-world problem solving. This is VERY unfortunate. We want you to start thinking how each of your courses can help you solve important real-world problems that you are interested in.

PROFESSIONAL PREPARATION

How are you doing with respect to each of the following?

resume, cover letter, writing skills, giving presentations, career plan, having professional/personal mentors, working independently, working in teams, reading and understanding technical material, using math, science, and engineering concepts to solve real-world problems

What do you plan to do to improve each of the above?

#### PERSONAL LIFE

How is your social life? What is good about it? What is Missing? What do you intend to do in order to fill in what is missing?

#### ECONOMIC STATUS

Where are you financially? Where do you want to be in 5 years? 10 years? 15 years? How do you plan to achieve your financial objectives?

#### *NOTE 5: DO NOT WORRY TOO MUCH ABOUT MONY*

The following may sound very cliché. Here goes. Do NOT worry too much about money. Worrying a little is ok, but not too much! You should find something that you are truly passionate about. Why make this point? Here's why. We see too many students go for what seems to them as lots of money early in their careers, sacrificing further education, hitting a technical/salary ceiling, and being locked out of very cool work (and additional financial rewards) for many many years. This is very sad to see. Look around. It occurs alot!

### **3. Education**

#### IMPORTANCE OF EDUCATION

Why is education important to you?

#### *NOTE 6: LIFE-LONG LEARNING*

Life-long learning is becoming increasingly important in order to remain competitive as economic globalization grows

#### EDUCATIONAL GOALS

What degree objectives do you have - short- and long-term?

#### PLANNED COURSEWORK

What courses do plan to take? When? Why? Are you building toward something (other than a degree)? It would help if the answer is yes!

#### INCLUDE SUMMER PLANS

Your summer plans could include special courses, projects, internships, etc.

Summers are very important. They are not to be squandered!

Squandered summers will show up on your resume!!

#### EDUCATIONAL OPPORTUNITIES

What educational opportunities do you plan to apply for? This could include, for example, NSF or GEM fellowship, scholarships, etc.

#### *NOTE 7: ENGINEERING AS A FIRST DEGREE*

Your engineering BS degree can be a first critical step toward any one of the following:

- (1) a more advanced engineering degree
- (2) medical school
- (3) law school (e.g. patent law)
- (4) business school

(5) etc...

The above are things that you might have already thought about.

#### **4. Research Experience**

Why is research important to you? Remember: We want you to use research as a vehicle to help you figure out what you are truly passionate about!

##### **RESEARCH GOALS**

You may wish to address the following: research topic, problem, approach, possible objectives, advisor, professional conferences

##### **RESEARCH/PROJECT OPPORTUNITIES TO BE PURSUED**

There are many research/project opportunities that you can try to take advantage of at ASU (e.g. FURI, NASA, WAESO, etc.) and around the nation.

What research/project opportunities do you wish to pursue?  
Explain Why!

Once again, we are using the term research here as representing a critical mechanism for learning what you are truly passionate about. Generally speaking, this does not occur in your classes.

##### **IMPORTANT DEADLINES**

When are the deadlines for each research opportunity that you wish to apply for? What is the application procedure?

Important deadlines might include deadlines for research/project opportunities (e.g. FURI, WAESO), STEM scholarships, Fellowships (e.g. NSF, GEM, etc.), graduate school, etc.

##### **INCLUDE SUMMER PLANS**

Your summer plans could include special courses, projects, internships, etc.  
Summers are very important. They are not to be squandered!  
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#### **5. Industrial/Work Experience**

Here industrial/work experience can imply working at a company, national laboratory, university, etc.

##### **IMPORTANCE OF INDUSTRIAL/WORK EXPERIENCE**

Why is industrial/work experience important to you?

##### **PRIOR INDUSTRIAL/WORK EXPERIENCE**

What industrial/work experience have you had?

##### **DESIRED INDUSTRIAL/WORK EXPERIENCE**

What industrial/work experience would you like? (e.g. biomedical company, pharmaceutical, hospital, national Lab, NASA, etc.)

## INTERNSHIPS TO BE PURSUED

FURI, NASA, WAESO, Universities, Intel, Google, etc.

Explain Why!

## INCLUDE SUMMER PLANS

Summer plans could include special courses, projects, internships, etc.

Summers are very important. They are not to be squandered!

Squandered summers will show up on your resume!!

## 6. Community Service

### IMPORTANCE OF COMMUNITY SERVICE

Why is community service important to you? How can it help you in your careers? The latter question is very important.

### *NOTE 8: EMPLOYERS AND LEADERSHIP*

Prospective employers (e.g. companies, national laboratories, universities, etc.) are ALL looking for leaders that know how to bring teams of people together...not just work in teams. It must be emphasized that we would never want you to sacrifice your grades or health to do community service.

### PRIOR COMMUNITY SERVICE

What community service have you engaged in? Why? Who did you impact? How did you impact them? What did you get out of it?

### FUTURE COMMUNITY SERVICE

What community service would you like to pursue? Why?

### PROFESSIONAL ORGANIZATIONS

What professional organizations are you a member of? Do you plan to join

Explain Why

### LEADERSHIP SKILLS

What is your plan for building leadership skills?

## 7. Personal Mentoring Plan

### IMPORTANCE OF MENTORING

Why is mentoring important to you?

What type of mentoring would you like to receive? Why?

What questions would you like answered by mentors?

What is your plan to gain suitable mentoring?

What potential mentors have you identified? What have you discussed?

## 8. Economic and Financial Goals

What are your economic goals?

Short term (5 years)

Long term (10-15 years)

Do your professional goals and objectives support these economic goals? That is, are your professional goals and objectives consistent with your economic goals/objectives?

## **9. Graduate School**

### **IMPORTANCE OF GRADUATE SCHOOL**

Why is graduate school important to you?

What are your higher education goals?

#### *NOTE 9: IMPORTANCE OF MS DEGREE*

An MS degree is becoming increasingly important as the ongoing global technological revolution continues to grow. Moreover, doing an MS thesis can help you figure out what you are truly passionate about!

What do you wish to pursue in graduate school? Why?

### **PREPARATION PLANS**

Describe your graduate school preparation plans. How do you plan to prepare for the each of the following? GREs, other entrance exams, graduate school admissions (e.g. preparing a statement of purpose, applying for fellowships, etc.)

### **MS THESIS AND COMMITTEE**

Do you plan to do an MS thesis? Why? If so, what will be your research topic? Why?

Have you thought about who will serve as your MS thesis supervisor? Have you thought about your MS thesis committee?

### **PhD IN ENGINEERING, TOPIC, THESIS, COMMITTEE**

Have you thought about pursuing a PhD in engineering? Why? If so, what will be your research topic? Why?

Have you thought about who will serve as your PhD thesis supervisor? Have you thought about your PhD thesis committee?

#### *NOTE 10: ACADEMIC CAREER AS A PROFESSOR*

Have you ever thought about becoming a professor? It is a great job! Lots of flexibility, great salary, etc... Give it some thought. You will need a PhD for this!

## **10. Long-Term Professional Goals**

Describe, in more detail, your long-term professional goals.

### **JOB DESCRIPTION**

Provide a detailed job description for your long-term job.

You ought to address:

responsibilities, flexibility, flexible hours, ability to choose work, work environment, ability to work from home, leadership responsibilities, benefits, etc.

### **STARTING YOUR OWN COMPANY**

Do you wish to start your own company one day?

What do you know about the following?

becoming incorporated, forming an LLC, etc., venture capital, intellectual property, patents, trademarks, etc.

## **11. Life-Long Learning**

### *NOTE 11: LIFE-LONG LEARNING*

Life-long learning implies that you will need to continue throughout your careers in order to remain competitive. More fundamentally, it implies that you will want to continue learning in order to be aware of changes that are occurring in our rapidly changing world.

### PROFESSIONAL DEVELOPMENT PLAN

What professional development are you planning short- and long-term? Summarize your professional development plan.

### PERSONAL DEVELOPMENT PLAN

What personal development are you planning short- and long-term? Summarize your personal development plan.

### NUTURING SPECIFIC SKILLS AND/OR HOBBIES

What specific skills and/or hobbies do you wish to nurture? (e.g. flying airplanes, building cars, etc.)

### FUTURE EDUCATION PLANS

Summarize your future education plan.

## **12. Family Planning**

You ought to give lots of thought to each of the following:

What plans do you have for socializing, meeting people, dating?

What do you seek in a partner? Value wise, education wise, financial, etc...

What matters most to you about your partner?

What plans do you have for marriage?

What plans do you have for kids?

What plans do you have for making important decisions together?

## **13. Travel Plans**

### IMPORTANCE OF TRAVELING

Is traveling important to you? Why?

What are places that you would like to visit? Why?

Do you want to live overseas for some time? Do you want to contribute lend your talents to some third world nation? Do you wish to serve in the Peace Corp?

## **14. Investment Plans**

What investment plans do you have?

What plans do you have for your retirement?

*NOTE 12: NEED TO START PREPARING FOR RETIREMENT*

When you join a company for full-time employment you typically fill out retirement forms during the first or second week of work!!! You want to have some plan in mind before doing this.

**15. Contingency Plans**

What back up plans do you have?

Sometimes, things do not work out the way we want!

Back up plans are therefore important.

By no means am I suggesting that you give up when things get a little tough! NO WAY!!

*NOTE 13: BACK UP PLANS ARE ESSENTIAL!*

You may have back up plans sprinkled throughout your career plan.

**16. Philosophy of Life**

What is really important to you?

e.g. work, having fun, relationships, families, religion, values, ethics, contributing to the nation, contributing to the world, etc.

What are your important values?

What basic rules will you live by?

How will you deal with uncertainty? Bad times?

It is very important to have a philosophy of life that keeps you grounded and sustains you throughout your careers.

**17. Other Issues**

What other issues do you think have been left out from the above career plan?

**18. References**

Provide a comprehensive list of references in your plan (e.g. papers, theses, books, reports, web sites, etc.) so that you know where you obtained certain pieces of information in the future.

*NOTE 14: THOROUGH DOCUMENTATION*

You should do this for anything you write that you plan on revisiting in the future. This is part of thorough documentation! Many (unwise souls) feel that thorough documentation is a waste of time. You will learn over time that thorough documentation saves time...lots of time over the long run!