

SUCCEED IN COLLEGE!
by Walter Pauk

ninth edition

An Introduction to Physical Science
Shipman • Wilson • Todd



BONUS book provides valuable information and practical
tips that can help you succeed in your physical science course

Succeed in College!

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Houghton Mifflin Company Boston New York

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Cover design by Diana Coe/ko Design Studio
Cover photograph © Jim Erickson/The Stock Market

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Printed in the U.S.A.

ISBN: 0-618-091610

123456789-CRS-04 03 02 01 00

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To the Student

This book was designed to help you achieve success, not only in your introductory physical science course, but throughout your college career. The information in this book was derived from the bestselling college study skills text, *How to Study in College*, Fourth Edition, by Professor Walter Pauk of Cornell University. The chapters present effective methods for mastering areas of interest to every student—managing time, taking good notes, learning from textbooks, and performing well on tests. More than one million students have used Walter Pauk's text in its first three editions. Now you can benefit from the Pauk approach to study skills.

Succeed in College! has been prepared exclusively to accompany *An Introduction to Physical Science*, by Shipman, Wilson and Todd, and is available only with this textbook. Here's to your success in college physical science—and beyond!

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CHAPTER

1

Controlling Your Time

YESTERDAY is a canceled check.
TOMORROW is a promissory note.
TODAY is ready cash. Use it!

Anonymous

Time flies, but that's no reason for you to go through each day simply "winging it." Through conscientious use of time and common-sense planning, you can make the most of your day. This chapter ticks off the important elements of time management, including

- Mastering time
- Scheduling time to gain time
- Principles of scheduling
- Types of schedules
- Scheduling for students with jobs
- Tips for saving time
- and finally*
- Getting things done



our success or failure in college depends directly on your use of time. If you use it wisely, you'll prosper. If you use it poorly, you'll fail in the job you came to do. The management of time is the number-one skill to master in college.

Anyone who has paid \$30 an hour (50 cents a minute) for a plumber knows that time means money. Actually, time is worth far more than money. Time is life itself, and no price can be put on that. The preciousness of time has never been evoked more convincingly and more succinctly than in the final words of Elizabeth I (1533–1603), queen of England:

All my possessions for a moment of time.

MASTERING TIME

If you want to take control of your life, you must take control of your time. Golda Meir, a schoolteacher in Milwaukee, went on to become prime minister of Israel. Her success was due in part to how she dealt with time. She said, "I must govern the clock, not be governed by it." In order to be the master of time instead of its slave, you must have a *goal*, you must have a *plan*, and you must *take action*.

Formulating a Goal

Nothing will fortify your inner self more than setting personal goals. To succeed in almost anything, you must have a goal. You have to know what you want to be before you can become it, and if you don't know where you're going, you won't get there. Goal setting is not kid stuff. It's student power! It's adult power!

Successful people in all walks of life realize the importance of setting goals. Businesspeople put their goals in writing. They have to show their weekly, monthly, and yearly goals to their immediate supervisors. Even the president of a corporation has to write goals and submit them to the board of directors. Setting goals is almost instinctive behavior. Pioneers heading west painted "California or Bust" on their covered wagons. This slogan was not a magic carpet whisking them across the continent, but it was a constant reminder of their goal.

You *must* express your goal in writing, on a sheet of paper. Your goal should be more specific and less general than simply getting a college education. You need to formulate a clear notion of not only *what* you want in

college and life but also *why* you want it. Writing is important. The act of writing will help you clarify your thoughts.

No matter what you want to become—a computer programmer, sales manager, a civil engineer, a teacher, a dentist, a journalist—put your goal in writing and work to achieve it. As a college student you will have to weather some very rough days, and at times things may seem to be falling apart. That's when you'll need a lifeline to hold onto. Focusing on your goal can give you the perspective and strength you need to keep going.

Making a Plan

A plan is the route or approach you want to take in order to reach your goal. A record sheet such as the one shown in Figure 1.1 will help you devise your plan.

On a separate sheet of paper jot down all that comes to mind regarding your goal. Summarize these jottings in a brief statement, and transfer that statement to block 1 in Figure 1.1.

Keeping your goal in mind, on a separate sheet jot down the steps that you must take to reach your goal. Select from your jottings the steps that lead directly to your goal, and list them in block 2 in Figure 1.1.

On another separate sheet list positive factors that will help you accomplish your goal. It helps a lot to know what's working for you. Once you've identified these factors, add them to block 3.

You need to face reality, so think about the problems and obstacles that you have to overcome to reach your goal. List them in block 4.

With your record sheet in hand, take the next step of talking to your academic adviser as well as to a counselor in the career center. Don't underestimate the value of thinking about, writing about, and discussing your goal and plan. Get as much discussion and feedback as you can; then modify your plan if necessary. You will end up with a plan for your future that is realistic and attainable.

Taking Action

Among the saddest words in life are "It might have been." If you take no action, your goals and plans will amount to nothing. Taking action, however, is more easily said than done. In order to take action, you will need a large dose of self-discipline. Adapting to military discipline might even be easier than imposing discipline on yourself, yet self-discipline is what you must have if you are to take the action required to implement your plans. For instance, let's say your particular goal is to excel in your biology course. You think you

1

My Goal

2

Positive Factors

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

3

Steps Leading to My Goal

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

4

Obstacles

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

FIGURE 1.1 Record Sheet for Planning

may have trouble with some of the terms and concepts, so you've decided to seek the assistance of a department tutor. The department identifies the tutor for you, and now it's up to you to contact him or her. If you procrastinate here, all the time and thinking that went into your plan will have been wasted. Taking action simply means taking those steps necessary to complete your plan. When you identify a task, you must go ahead and do it.

SCHEDULING TIME TO GAIN TIME

Lee Iacocca, president of Chrysler Corporation, who became internationally famous as the man who saved the company from almost certain bankruptcy in 1981, made this observation: "I'm constantly amazed by the number of people who can't seem to control their own schedules." The way we use time—or waste it—is largely a matter of habit. It is not easy to change old habits, but if they are bad habits, they put a ceiling on achievement. For example, a professional baseball player with a poor batting stance can become a good hitter, up to a point. Unless he improves his stance, however, progress behind that point is doubtful. To change and begin almost all over again—to break a bad habit and make a good one—takes determination and will, but the decision to change brings the chance for success. If you find that you need more time for all your studies and other activities, consider scheduling your time in order to gain time.

Where Does All the Time Go? _____

In an effort to find out specifically how he spent his time, a student kept a diary of his daily activities for one week. He found that his "ten-minute" coffee break was nearer forty minutes. Figure 1.2 shows one page of his diary and contains an analysis that demonstrates how the student could avoid dribbling away minutes and save hours for both recreation and study. A time log, or daily diary, is a valuable tool for getting control of time. Without a time log, you really don't know how you are spending your time. Try keeping one for a week or two.

Reasons for Scheduling _____

How much spare time do you have every day? The student whose activities record appears in Figure 1.2 would probably answer, "None. There are not enough hours in the day for all the things I have to do." That's the way things may seem to you too, but it's not necessarily the way they are.

Time		Time Used	Activity - Description	
Start	End			
7:45	8:15	:30	Dress	Paste 3 X 5 cards on mirror: laws of economics; psychological terms; statistical formulas. Study while brushing teeth, etc.
8:15	8:40	:25	Breakfast	
8:40	9:00	:20	Nothing	Look over textbook assignment and previous lecture notes to establish continuity for today's psychology lecture.
9:00	10:00	1:00	Psychology - Lecture	
10:00	10:40	:40	Coffee - Talking	Break too long and too soon after breakfast. Work on psychology notes just taken; also look over economics assignment.
10:40	11:00	:20	Nothing	
11:00	12:00	1:00	Economics - Lecture	
12:00	12:45	:45	Lunch	
12:45	2:00	1:15	Reading - Magazine	Rework the lecture notes on economics while still fresh in mind. Also, look over biology assignment to recall the objective of the coming lab.
2:00	4:00	2:00	Biology Lab	
4:00	5:30	1:30	Recreation - Volley ball	
5:30	6:00	:30	Nothing	Use this time to read a magazine or newspaper.
6:00	7:00	1:00	Dinner	
7:00	8:00	1:00	Nap	Not a good idea. Better finish work, then get a good night's sleep.
8:00	8:50	:50	Study - Statistics	
8:50	9:20	:30	Break	Break is too long.
9:20	10:00	:40	Study - Statistics	
10:00	10:50	:50	Chat with Bob	Good as a reward if basic work is done.
10:50	11:30	:40	Study - Accounting	Insufficient time allotted, but better than no time.
11:30	11:45	:15	Ready for bed	
11:45	7:45	8:00	Sleep.	While brushing teeth, study the 3 X 5 cards. Replace cards that have been mastered with new ones.

FIGURE 1.2 Record of One Day's Activities and Suggestions for Making Better Use of Time

TABLE 1.1 Time Spent by Students in a Typical Week

Activity	Hours Spent
Sleep	49.3
Study	19.8
Classes and labs	18.7
Meals	<u>10.7</u>
Total	98.5

Source: From "College Students Report on the Use of Time," by Arthur A. Dole in *The Personnel and Guidance Journal* 37 (May 1959), p. 635. Reprinted by permission of American Association for Counseling & Development.

Table 1.1 shows how students at one university spent time in four main activities during a typical week. The students spent 98.5 hours sleeping, studying, attending classes and labs, and eating their meals. When you subtract that total from 168 (the number of hours in a week), you have 69.5 hours unaccounted for—almost ten hours a day.

You can gain extra time in only two ways: (1) by doing a job in less time than usual, (2) by using small blocks of time that you usually waste. The first way requires you to study more efficiently, and this book provides a great many techniques to help you do just that. The second way requires you to schedule your time, and this chapter offers a number of suggestions.

Although some people believe it's a waste of time to make a schedule, planning actually *saves* time and energy. Sure, it takes time to schedule your time, but the time you spend making a schedule is returned to you several times over when you work—and relax—according to your schedule. Spending a little time to make a schedule saves a lot of time that you would otherwise waste.

Some people feel that maintaining a schedule will make robots or slaves of them. Just the opposite is true. The people you see dashing madly from class to library to gym, or eating a junk-food lunch on the run, are slaves to time because they are not in control of their time. The student who schedules time, who decides how it will be used, is the master of time rather than its slave.

Some people won't schedule their time because they want to be "flexible." But a disorganized person wastes so much time that there really isn't any time left to be flexible with. Scheduling, however, frees up time for a variety of activities, and flexibility can certainly be built into a schedule.

Scheduling actually gives you more time, makes you the master of your time, and provides the flexibility that *you* want. Here are some additional benefits of scheduling.

1. ***Gets you started.*** You know how hard it is to get started. Often a well-planned schedule can be the external force that gives you a needed shove.
2. ***Prevents avoidance of disliked subjects.*** The mind can play tricks. Without actually deciding to do so, you can keep yourself from doing something you don't like by occupying yourself with favorite subjects.
3. ***Monitors the slackening-off process.*** By apportioning time properly, you can keep yourself from slackening off as the semester wears on.
4. ***Eliminates the wrong type of cramming.*** If cramming just before exams is to be effective, the original studying and learning must take place day by day.
5. ***Makes studying enjoyable.*** When done without the pressure of time, studying and learning can be intensely interesting.
6. ***Promotes cumulative review.*** Sandwiching in short review periods is the best way to retain knowledge as well as to prepare for exams. It is less fatiguing and more effective to review a subject in four *distributed* thirty-minute sessions than in a single *massed* two-hour session.
7. ***Frees the mind.*** To keep from forgetting details, you may think and rethink them. This often leads to a tense feeling of pressure and confusion. Putting things to do on paper takes them off the mental treadmill.
8. ***Controls the study break.*** Rewarding yourself with a ten-minute break when you finish a scheduled block of study helps minimize clock watching. During short breaks, stand up, walk around, or just stare out the window, but keep in mind the subject you're studying. Then you won't need a warm-up period when you resume studying.
9. ***Keeps you from overlooking recreation.*** Physical and social activities are needed for a well-balanced personality, good health, and efficient study. On the other hand, allowing extracurricular activities to outweigh studies probably accounts for more failures in college than anything else.
10. ***Helps raise your recreational efficiency.*** One of the saddest wastes of time and pleasure is to mix study time and recreation time—that is, when studying, to keep thinking how nice it would be to be playing some game; and when playing, to think about all the studying that needs to be done.
11. ***Regulates daily living.*** Without a plan to guide you, assignments are bound to pile up. When they do, you lose control, and your daily living

is thrown into chaos. With a schedule, even weekends and holidays can be free from worry.

PRINCIPLES OF SCHEDULING

Just as there are basic rules for driving a car, no matter how long or short a trip you are taking, so there are basic rules for making a study schedule. The following list includes general principles that apply to all study schedules.

1. ***Eliminate dead hours.*** Make each block of one hour a productive unit. Some of the most important lessons of our lives are learned in less time.
2. ***Use daylight hours.*** Research shows that each hour used for study during the day is equal to one and a half hours at night.
3. ***Study before recitation-type classes.*** For a course in which you recite and discuss, it is an advantage to study just before class. The material will be fresh in your mind.
4. ***Study after lecture-type classes.*** For a lecture course, retention and understanding are aided by a review of your lecture notes immediately after class.
5. ***List according to priorities.*** By putting first things first, you are sure to get the most important things done on time.
6. ***Avoid too much detail.*** Packing a weekly schedule with too many details is a waste of time for two reasons. The time you take to make such a schedule could be better used in studying a subject directly. The chances of your following such a schedule are very slim.
7. ***Know your sleep pattern.*** We all have daily cycles of sleepiness and alertness. If your work, classes, and circumstances permit, sleep when you're sleepy and study when you're naturally alert.
8. ***Discover how long to study.*** The rule of thumb that you should study two hours for every hour in class is a rough guide at best. The time required varies from student to student and from subject to subject. Start out allowing two hours of study for every hour in class, but adjust the hours according to your experience, as you find out how long you need to master each assignment.
9. ***Plan blocks of time.*** Optimum efficiency is reached by planning in blocks of one hour: fifty minutes to study and ten minutes for a break.
10. ***Allow time for sleep.*** Your need for eight hours of sleep every night is supported by medical evidence. Make no mistake about it: The quality of your education depends on sufficient sleep.

11. ***Eat well-balanced meals.*** Take time for good meals. Living on greasy foods or a low-protein diet most of the time is no way to treat your body and brain. Dietary deficiencies result in irritability, fatigue, and lack of pep.
12. ***Double your time estimates, and start long jobs ahead of time.*** Most people tend to underestimate the amount of time they need for a project. To avoid discovering the hard way that you cannot bang out a 1500-word paper in three hours the evening before it is due, start ridiculously early, thus allowing yourself more time.
13. ***Don't pack your schedule too tightly.*** Be precise, but leave room for last-minute problems that require your time.
14. ***Make a plan for living, not merely for studying.*** After all, life, even in college, is many-sided, and its many sides must be recognized.

TYPES OF SCHEDULES

It is important to choose the type of schedule that fits your circumstances best. Some students work best with a detailed schedule; others work best with a brief list of things to do. Circumstances also influence the type of schedule you should make. There are on-campus students, commuting students, married students, employed students, night-class students, and part-time students, and each has different scheduling requirements. You should *adapt* the principles of schedule building to your personal circumstances, rather than *adopt* some ideal model that fits hardly anybody, let alone you.

The schedule for *you* is the schedule that *works*. With time and experience, you can refine your schedule until it is an almost perfect fit for your situation.

Master Schedule

Any plan to schedule your time and activities must have at its core a master schedule—that is, a fixed schedule of activities. A master schedule needs to be drawn up only once each semester, unless changes occur in your basic program. Figure 1.3 shows a useful format.

First, fill in all required school activities, such as courses, classes, and laboratory periods. Then add other regular activities, such as a part-time job, commuting time, sports, and regular meetings. Next, add housekeeping chores, sleeping, and eating. When your fixed activities have been accounted for, the blank spaces on the chart are available for weekly or day-by-day planning. Here are some suggestions on how to use some of the time periods represented by the blank spaces in Figure 1.3.

	Mon.	Tues.	Wed.	Thurs.	Fri	Sat.	Sun.
7-8	←	Dress	and Breakfast	→			
8-9	History		History		History	Dress + Breakfast	
9-10		Phy Ed		Phy Ed.		Phy Ed.	Dress + Breakfast
10-11		Chem		Chem.		Chem	
11-12	French		French		French		
12-1	←		Lunch				→
1-2	Math	Film making	Math	Film making	Math		
2-3				↑			
3-4				Chem lab.			
4-5	English		English	↓	English		
5-6							
6-7	←		Dinner				→
7-8							
8-9							
9-10							
10-11							
11-12	←		Sleep				→

FIGURE 1.3 A Master Schedule

Monday/Wednesday/Friday

- 9–10 A.M. Use the free period after history (a lecture course) to study lecture notes.
- 10–11 Since French (at 11) is a recitation course, prepare by studying during the free period that precedes class.
- 2–3 P.M. In math class (1–2) problems are usually discussed and worked out on the blackboard. Take very brief notes on both discussion and blackboard work. Then, because math problems can quickly become “cold,” use the free period (2–3) to go over the work covered in class during the preceding hour.
- 3–4 English (4–5) is often a discussion period. Use the free hour to study and warm up in advance.
- 7–8 Evening study time begins. Start with English, your last class, so that any notes you have taken can be reviewed before forgetting takes place.
- 8–9 Study French, giving priority to the notes and assignments of the day.

Such a master schedule, on a 5×8 card taped over your desk or carried in your notebook, unclutters your mind. More important, it enables you to visualize the blank boxes as actual blocks of time into which you may fit necessary activities. With the master schedule as your base, you can devise any type of schedule that fits your unique combination of courses, your part-time or full-time job, and your personality.

Detailed Weekly Schedule _____

Some people work best when they are guided by a weekly schedule that is an expansion of the master schedule. If the demands on your time are both heavy and predictable, you may need a detailed weekly schedule. This kind of schedule needs to be made out only once, early in the semester. A sample weekly schedule is shown in Figure 1.4. The lists that follow indicate how the principles of scheduling were used to set it up.

Monday Through Friday/Saturday

- 7–8 A.M. Avoid the frantic dash and the gobbled (or skipped) breakfast by getting up on time.
- 12–1 P.M. Take a full, leisurely hour for lunch.
- 5–6 Relax before dinner—your reward for a day of conscientious work.