APPLICATION FOR CBI ID & SIGNED STUDENT AGREEMENT

1. I agree not to request an exemption from the policies and allowable exceptions listed in the CBI Student Handbook and to the extensions and details shown in the CBI Policies Handbook.

2. If I want to know more details about a CBI policy, or the reason for it, I will first look in the CBI Policies Handbook. If the Handbook is inadequate, I will submit a written request for information and wait at least one class day for a written reply. I will not rely on what I hear from friends.

3. I agree to seek information and assistance from Physics Dept. and CBI staff only in person in the CBI Consulting and Exam Rooms, during my class’s scheduled hours. For a problem not immediately solvable by the CBI staff, I agree to submit my problem on an appropriate form in the Consulting Room during my class’s scheduled hours, then wait for a written reply.

4. If I decide that instructional material is inadequate, I will allow enough time to come to the CBI Consulting Room, sign in, and wait my turn for assistance. I must allow considerably more time toward the end of the semester. If I come in with proper preparation, I will earn Evaluation points to be applied to my next exam.

5. I will adjust my exam-taking pace to not get caught short during the period of restricted exam taking described in my “CBI Classroom and Exam Schedule.” I understand that I should keep my Projected Grade above my desired course grade throughout the semester.

6. I will report any error in CBI processes or records immediately, in writing.

7. I understand that I may receive important course information via e-mail to my pilot address, and take responsibility to check for messages at least weekly.

8. I purchased or printed a CBI Student Handbook for Summer 2002 Semester. I have carried out each step listed in “Getting Started with Your CBI Course.”

9. Print: STUDENT NAME: 

STUDENT MSU ID NO.: __________________________ COURSE: ____________

STUDENT SIGNATURE: __________________________

Send your pilot email address to others for study group? ______

First Exam, units covered, and date: __________________________

Second Exam, units covered, and date: __________________________

10. Consultant:

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Consultant Initials Gr. No. Date Student’s CBI ID
CBI STUDENT HANDBOOK
Summer 2002

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GETTING STARTED WITH YOUR CBI COURSE

Here is a checklist of the steps you need to carry out to start any CBI course. It will guide your reading of the CBI Student Handbook. Items marked [V] require a personal visit to CBI.

Check Off Each Step As You Finish It.

[V] Attend CBI Orientation May 13; for the schedule, see the CBI web pages http://www.physnet.org/cbi.html. If you miss, come to our Consulting Room in 170 Giltner during the hours for your class to view the orientation.

Get Materials for your Course

___ Buy a CBI Student Handbook from a bookstore, or print it from the CBI web pages (about 30 pp including modules 155 and 180) at one of the Micro Labs.

___ Print your course syllabus from the Course Info link on the CBI web pages.

___ Be sure you have purchased the correct version of the textbook for your course, as detailed in your course syllabus. If you have trouble getting the correct version of an item, tell us at once!

___ Fix small errors in your textbooks (such as errors in problem answers) by using the “Corrections for Textbooks” on the CBI Web Pages.

Understand How CBI Works

___ Read page ?? and “How CBI Works” starting on page ??.

___ Read “Advice for Using CBI” starting on page ??.

___ Read “The CBI Web pages” starting on page ??.

___ Read your course syllabus. It may list required pre-tests or homework for some exams. The “CBI Classroom and Exam Schedule” section lists rooms, hours, and various CBI deadlines.

___ Note the suggested exam schedule in your syllabus. It gives an order of studying units consistent with the prerequisites and input skills of each module, and a reasonable schedule for taking exams. You are not required to follow this schedule in detail, but it’s a good starting point. If you vary the order, check the input skills.

___ Decide the first two exams you will take.
   First exam: __________ units covered __________ date: __________
   Second exam: __________ units covered __________ date: __________

Prepare your CBI ID Application

___ Fill out this checklist.

___ Read the “Application for CBI ID & Signed Student Agreement.” This Agreement must be correctly filled out and signed by you and approved by a course consultant before you will be issued a CBI ID number.

___ If you want us to send your email address to others wishing to form a study group for your class, say YES to that item on your CBI application.

___ [V] Bring your textbook, syllabus, CBI Student Handbook, and completed checklist and ID Application to the CBI Consulting Room during the hours for your class and get your application approved, preferably Tuesday the first week of classes, or as soon as possible thereafter.
THIS IS CBI PHYSICS

Welcome to MSU’s “Competency Based Instruction” courses!

This Handbook:  Use this handbook: (1) to learn about CBI; (2) to get started in your course; and (3) to look up course requirements and policies. We recommend that you read this page, browse the Table of Contents, then follow the steps in “Getting Started with Your CBI Course.”

Topics and Processes:  Guided independent study is the only system used in CBI courses. The course content is similar to a traditional course, and the standard of performance for a particular grade is approximately the same. However, we do cultivate several additional skills, and some of the processes we use are different.

Building Skills:  The innovations that are unique to this course are based on the assumption that you want to develop those skills and habits (“competencies”) which are the hallmark of respected professionals in science and technology. We want you to go beyond merely being able to demonstrate those professional skills at one point in time; we want you to start to use them habitually. If you have such a goal, CBI should prove to be a profitable experience.

A Unique Set of Processes:  Here are some non-traditional CBI processes:

- Rather than having live lecturers, our courses use materials based on those of good lecturers. The materials include Special Assistance Supplements, which contain much of the help normally given students during Office Hours. If these materials prove to be inadequate for you, and you become stuck, come in for help during scheduled hours. A Consultant and/or the Instructor will be glad to help you, one on one, get past the sticking point so you can resume your independent study.
- You may complete your course as quickly as you are able, but not so slowly that you get caught short at the end of the semester.
- You help select which topics you study, and the order in which you study them.
- After you’ve met minimum requirements, you can earn “extra credit” by selecting optional topics.
- For most of our courses we are open during afternoon and evening hours, four days/week.
- We give more exams than most courses, but no final exam. All exams are graded by hand.
- We give you daily feedback on how you are doing.
- CBI Consultants are available to help you learn physics and discuss policies, but official printed materials are the final authority on policies.
- If you want CBI information, come to our Consulting Room during any of your class’s hours. Our policy is to help you “one on one.”
- You may make a complaint or request orally, but it will be acted upon only after you have made it in writing on an appropriate signed form, and handed it to a Consultant by any relevant deadline. A written reply will be discussed with you in person. Written communication ensures that your requests are handled correctly, and avoids misunderstanding in dealing with the large number of CBI students.

Will CBI work for you?  We provide a structure for independent study, based on written materials, including the Handbook description of how CBI operates. CBI Staff cannot read these materials for you. Our physics consulting style is meant to facilitate your independent study, not to replace lectures or to provide un-structured tutoring. If you are attracted by the scheduling flexibility and challenge of studying independently (and building the skills required), we’re here to help.

Advice:  Physics courses require you to become skillful in problem solving. We provide you with problem-solving techniques used by professionals, but the mental processes used to solve a particular problem can only be described about as well as the mental processes used to solve a particular crossword puzzle. Before seeking help, mentally try many possibilities. Sometimes you’ll need to put a problem aside and come back to it later. We urge you to pursue each solution diligently. Train your mind!
How CBI Works

1. MATERIALS AND TEXTS

The course material is organized in “units” or “modules,” the length of one or two lectures. Modules contain a list of skills to be acquired, assistance toward attaining these skills, and a model exam that shows you the format of the real exam. Some units require materials on reserve in the Physics-Astronomy (PA) library or involve short projects. The materials you need and where to get them are made clear in the “Getting Started” procedures on page ???. Corrections to your materials may appear on the CBI Web page.

2. KEEPING IN TOUCH

Your records will be posted on the web (see below for details). We also may send you email at your pilot address. If you don’t use your pilot account, please go there anyway and set it up to forward automatically to the account you do use. Check your email at least once a week, say Friday or Monday.

3. STUDYING

Good Study Habits. Professional learning skills are detailed in unit 155, Student Strategies for Success in CBI Physics. Start by knowing the input skills; if not, review. To master the output skills, understand where the equations came from, and work the problems. Don’t just “plug and chug.” Expect items in the output skills list to appear on the exams. When you think you’re ready for an exam, take the model exam closed book. If you have trouble on the model exam, go back and study the whole unit, not just the question you missed—the real exam could well test you on a different subset of the output skills. There is no way to get a good grade without learning the physics.

Manage Your Time. Be prepared to spend enough time on your class. Since CBI doesn’t have lectures, that can be 2-4 hours per credit hour per week, plus exam taking and consulting. Leave a safety margin in your exam schedule, to decrease the impact of setbacks or other demands on your time. Keep ahead of the suggested path schedule in your syllabus by taking exams early, before other commitments kick in. To help you fight procrastination, CBI’s pace point system (described below) rewards keeping ahead of schedule with bonus points. Students who get behind often find it discouragingly difficult to catch up, since most people find it hard to learn physics at a fast pace. Plan your exam-taking so that you will not be caught short near the end of the semester when we restrict the rate at which you can take exams to roughly two per week (see your syllabus for details). Procrastinators will need higher exam scores to compensate, and risk something going wrong with no time to adjust.

4. OBTAINING HELP

For an authoritative answer to any question on CBI, use the CBI Policies Handbook, available in the CBI Consulting Room and on the CBI Web page.

To obtain help when our course materials or the CBI Policies Handbook are inadequate for you, come to our Consulting Room during your regular class hours. If you find that help inadequate on some specific point, come to the Instructor’s office hours. If, during your class’s regular scheduled hours, you cannot come as often as you (personally) need to, then you should drop the course. Note that there can be delays in getting help, especially near the end of the semester.

For help on physics, bring your course materials and your notebook that shows your work up to the point where you became stuck. However, we do not consult on model exams, which exist solely to evaluate your readiness. Fill out an appropriate Consultation Form and a Consultant will help you when your turn comes. Coming to the consultation prepared in this fashion will earn 3 Evaluation Points to increase your exam score (details later).

Using your description of your problem, we will decide on the technique to use in helping you. For example, we will not show you how to work entire homework problems but we will help you learn the skills necessary for getting past the point at which you are stuck.
You may also use other forms to request consultation on unclear policies, to request a re-grade of an exam, for a more extensive discussion of “where you went wrong” on an exam, or to correct errors in your record. Fill out an appropriate form in the Consulting Room and you will receive help when your turn arrives. If the problem requires investigation, we may ask you to wait until the next day.

5. PRE-TESTS & POST-TESTS IN PHY231B, PHY181B, PHY183B, PHY233B

There are certain “gateway” skills that must be learned well in order for you to have a decent chance of succeeding in certain courses. If you are in one of those courses, we will require you to pass a pre-test on each of the skills, using the Web, before you can take the corresponding written exam. If pre-tests are required, they are listed in your syllabus. Browser requirements for use of the Web for the pre-tests are described on page ???. To avoid frustration, go through the on-line Advice and Practice section thoroughly. The pre-test may require that you demonstrate mastery of a set of skills by giving a certain number of consecutive correct answers. If you start a pre-test and do not pass it, you must wait and try again the next day.

If you pass a Web pre-test, but then receive less than 60% on the corresponding written exam, you need to study again. Wait until the next day, then pass a closed-book Web post-test in our Exam Room. If you start a post-test in our Exam Room and do not pass it in that sitting, you must wait until the next day to try again. You must pass it before you can take any other exams.

6. EXAMS

When you have mastered the skills in one or more units, you can receive credit through one of the exams listed in your syllabus or Course Information web page. Exams may only be taken once. Most students find it tough to do well on more than one CBI exam in a single day.

To take an exam, come to our Exam Room and pick up an “Exam Application.” Fill it out and give it to the Exam Manager at the nearby computer. Enter your name, time, and desired exam on the Exam Request sheet. Please ask for the right exam—if you see the exam, you must take it. The exam manager may ask you for ID. The exam manager will tell you your sign-in code and give you an Exam sheet. You then pick up an official Answer Sheet and scratch paper and take a seat in the exam room.

Proper Exam Technique. Sign and date your exam answer sheet; use it to write all the reasoning that supports your answers. To receive credit even for a correct answer, you must demonstrate your understanding by showing the reasoning leading up to your answer. Check all parts of the exam before handing it in. The scratch sheets must be turned in, but are not graded.

The exams are closed-book. You may bring your calculator, but no other materials (unless explicitly stated in your module’s model exam). **Graphing calculators or other calculators with letter keys (allowing entry of text) are not allowed.** We expect academic honesty of CBI students. On occasion, we’ve had to lower a course grade to zero because an examinee brought a “Cheat Sheet” (in a calculator or elsewhere), plagiarized, or removed exam-related materials from CBI.

7. EXAM GRADING AND TOPIC FRACTION

A CBI Grader never “takes points off”. Starting from 0, the grader adds points for each required skill demonstrated. We award structured partial credit; later steps which cannot be obtained due to missed earlier steps are dropped out of the scoring. The skills related to physics topics which are evaluated on exams include demonstrating physics Knowledge on exams (K), applying physics Rules correctly (R), setting up correct problem solving Plans (P), applying relevant mathematics Accurately (A), and demonstrating excellence by getting maximum credit on individual problems (X). The “Topic Fraction,” \( t \), is just the sum of these divided by the maximum possible on your exam. An additional skill, Communicating the solution clearly (C) is also evaluated, but not included in the Topic Fraction. Criteria for these skills are discussed on the Exam Application and unit 155 in this *Handbook*. Your exam points over the semester result in a scientific skills profile which allows us to write highly credible letters of recommendation (see unit 180 in this *Handbook*).
8. COURSE GRADING SYSTEM

We post a detailed exam grading report on the Web the day after you take an exam.

Your syllabus shows you the CBI Points needed for each final grade level. How CBI points are earned from exams is explained below. Your course records show your Earned Grade, which is the final course grade you will receive if you quit interacting with CBI. You also see your Projected Grade, our estimate of grade you would receive if you continued your present performance. The “Raw” Earned Grade shows how close you are to the next grade boundary (2.9 is close to earning a 3.0). If you are close to a grade boundary near the end of the term, see the advice section on page ??.

9. PACE POINTS

CBI points are awarded for keeping on pace to earn a reasonable grade. The purpose of pace points is to provide intermediate goals, and enough incentive for meeting them, that students gain experience in successful time management. Pace points are evaluated each week on the Pace Day mentioned in your syllabus. You earn pace points for each week you’re on track to earning a 2.5 or above. A 4-credit class has a maximum of 13 pace points available, and a 3-credit class 3/4 as much. Over 14 pace weeks, that’s a bit less than one CBI point per week in a 4 credit class. If the course is shorter (due to late registration, for example), each pace week is worth proportionately more pace points. You will see displays with X for awarded pace weeks, O for missed pace weeks, and dots for undecided pace weeks.

10. LOOKING AT YOUR GRADED EXAM

During your class’s next five CBI class days, you can look at that exam or challenge its grading (but see your CBI Classroom and Exam Schedule for what happens at semester’s end). To look at the exam, come to the CBI Consulting Room and fill out an Exam Archive Request Form. To challenge the grading of the exam and cause a re-grade, submit an Exam Re-grade form. Results will be posted on the web. To look at the reasoning of the re-grade, fill out an Exam Archive Request Form. If you were unable to come to the Consulting Room during that five-day period, see the CBI Policies Handbook for the procedure.

11. EXAM CBI POINTS

The number of CBI points you earn by taking an exam is proportional to your percentage score (the Topic Fraction $t$) on the exam times a weight factor for that exam. An exam with covering 1, 2, or 3 units earns roughly 1.5t, 3.6t, or 5.4t CBI points. Thus, a score of 60% on a 2-unit exam earns about 2.2 CBI points. Any pace points earned by the exam would increase this amount. The way scores on various skills are converted to CBI points is shown on your CBI web records in detail, and the terms used are web-linked to the corresponding CBI glossary entries. An overview of exam CBI points can be found on page ?? of this Handbook, and the full equations on the CBI Reference Shelf web pages, but you probably won’t ever need to refer to those details. Just keep your Projected Grade above your desired course grade throughout the semester by steadily taking exams on all the required units and getting good exam scores, just as you would in other courses (a $t$ of 75% or more is good).

12. ORGANIZATIONAL PROFESSIONALISM POINTS

You earn OP points by helping the CBI staff help you and other students efficiently. This means following the rules on the back of the exam application and interacting professionally with CBI staff. Lost OP points decrease the points available on your exam by $t/12$ per OP point.

13. EVALUATION POINTS AND CONSULTATIONS

Knowing when to seek help is an important skill for professional learners. You can earn 3 EV points for well prepared consultations which point out where materials were inadequate for you. Fill out your request for help, marking each of the three professional learning strategies that you have employed before
your consultation; they help you get the most from the consultant’s assistance. For each strategy that the consultant agrees you have used, an EV point is awarded.

Filling out the module questionnaire on the exam application earns 1 EV point per module. EV points are also awarded for evaluating modules, exams, the Handbooks, CBI Web pages, or other CBI materials. Useful suggestions submitted on the appropriate form will increase your exam score by t/16 per EV point. Catching a typographical or grammatical error earns 1 EV; a physics error earns 3 EV. A useful, specific suggestion on a confusing explanation or unclear policy earns 1-3 EV, but something vague like “more examples” won’t earn any. In a few extreme cases, EV points can max out, as described on the CBI web pages.

14. REQUIRED UNITS

The Required units in your course syllabus cover the material you should study in your course. However, you will receive your final posted Earned Grade whether or not you have finished all of your Required units. One of the conditions for receiving credit from exams covering Optional units (see below), is to have completed exams covering all of your Required unit by the end of the term.

15. “EXTRA CREDIT”: OPTIONAL UNITS AND PROVISIONAL POINTS

Taking exams covering Optional units is CBI’s mechanism for “extra credit”. An Optional unit is any unit on your Course Information web page list not Required by your syllabus. The CBI Web pages show how to obtain Optional units not in your textbook, and advise you in selecting optional units.

Points from exams covering Optional units are called “Provisional Points.” They are only awarded if the Topic Fraction on the exam is 50% or more. Provisional points change to Earned points contributing to your Earned Grade only (1) after you have taken exams covering all Required units; and (2) if your final Average Topic Fraction is at least 50%.

Your Average Topic Fraction is the simple average (no weighting by units) of all the Topic Fractions you received on exams that included Required units. If you have apparently Earned your Provisional Points, but later cause your Average Topic Fraction to fall below 50%, the points revert to Provisional status. If your record shows that conditions (1) and (2) are not satisfied at the end of the semester, your Provisional Points will not count toward your grade.

If an exam covers both Optional and Required units, its topic fraction counts towards Average Topic Fraction, and its points are split into Provisional and Earned. The fraction of the total exam points called Earned is just the fraction of Required units to total units of the exam; the rest are Provisional. However, a Topic Fraction below 50% reduces the Provisional points to zero.

ADVICE FOR USING CBI

IF PROBLEMS ARISE Suppose you have a problem beyond your control. Examples might be an illness, a death in the family, or a week-long field trip in another course coming on short notice. Possible remedies are:
(1) work harder and get the course done anyway;
(2) request a change of the pace deadline via a “Pace Adjustment” form;
(3) request a grade of Incomplete;
(4) Drop the course, perhaps with a grade of P or N; or
(5) Drop/Add to a lower-level course that has the same basic lessons (only if you are in 183B/184B). The CBI Policies Handbook on the web pages show the requirements to qualify for these remedies.
An Exemption Won’t Ride to the Rescue. The meaning of CBI grades is defined by the rules in your Handbook. Suggested remedies in case of problems were mentioned above. Asking for an exemption is trying to get a grade under diluted requirements which don’t appear on your transcript. Here are some claims which won’t win an exemption:

a. Bad advice from a friend or an unidentified CBI staffer. Rely on the written policies.
b. An outdated textbook, handbook, syllabus or schedule.
c. Request for points from exams covering Optional material without fulfilling all requirements.
d. Request for a grade of Incomplete based on a note from a health care professional without the length of the student’s incapacitation from doing course work.
e. “The instruction was inadequate.” CBI students agree to allow enough time for help on materials they find inadequate.

If You’re Near a Grade Boundary your points won’t be “rounded up,” but here are some suggestions:

- If you’re eligible for optional credit and have time for more exams, consider Unit 09 (reviewing a module before you’ve taken an exam on it). The Unit 09 exam doesn’t count against your exam restrictions. But doing well on the exam including the reviewed module is still your first priority.

- If you’re very close, you can earn EV points by submitting Suggestion forms—see page ?? for details. You can also review your CBI experience—contact your professor if you don’t find the form at 164 Giltner or on the web. If you are $P$ CBI points from a grade boundary, you’ll need at least $16P/10$ EV points awarded. Submit more than enough suggestions in case some are rejected.

- If neither helps, console yourself with the knowledge that in any large class, someone is just short of any given boundary, and someone just above. At least in this class, you’ve known where the boundary is all semester long. We salute your effort, and are sorry you didn’t quite make it.

Here are some useful “tactics” for getting the best CBI grade for your efforts.

- The most important single thing to do to ensure you pass in CBI is simply to start taking exams the first week. The first exam or two are usually pretty easy. Take them seriously (and soon!) and you can really help yourself by earning a cushion of Pace points. Just don’t get over-confident. That projected 4.0 can evaporate quickly if you don’t keep taking exams and doing well!

- Pace points are a big deal and can improve your final grade by a full point or more. You would need to raise your topic fraction by up to .02 on each exam you take to compensate for one missed pace week. Students with 3.0 to 4.0 grades obtained over 20% of their CBI points from pace.

- The “Points to Deadline” in your CBI records is only enough to keep you aimed at a 2.5 grade. If you want a higher grade, you should be doing better than just keeping to this pace.

- Keeping your topic fraction high is a key. This makes “extra” points like EV’s more valuable, makes it easier to earn pace points, and opens the door to points from optional units. Before you take an exam, be sure you’re prepared.

- Prefer exams covering multiple units (T exams) over Unit exams. You’ll have fewer exams and get extra Accumulation credit for the same material. See your course syllabus and the web page for details. However, you must plan ahead, because T exams are not available for all units.

- Consulting when you’re stuck helps two ways: Coming in with a good, focused question will earn EV points, increasing the exam weight. Understanding the material better raises your score.
THE CBI WEB PAGES

To view your CBI record or CBI reference materials, use any full-featured Web browser such as Netscape Navigator 2.0 or later or Internet Explorer 3.02 or later.

Optional units and many reference pages need a .pdf viewer: The Acrobat Reader .pdf viewer is installed on Micro Lab computers, or downloadable for free (but slowly) from www.adobe.com. You can print .pdf files by clicking on the print icon in your browser (Netscape) or the Acrobat pane (Internet Explorer).

CBI pre-tests require a more up-to-date browser (with appropriate Java support): Netscape 4.04 or later and Internet Explorer 4.0 or beyond work with correct configuration, though in a recent test, the Internet Explorer configuration in the Micro Labs did not work.

The CBI Home Page is http://www.physnet.org/cbi.html . Bookmark it! If you’re away from your usual computer and have forgotten the address, you can find it from the main MSU website by http://www.msu.edu , then enter cbi home page in the MSU Sites search box and hit Enter. This method works except around midnight when the search index is being updated.

On the CBI Web pages, you can find many things: your CBI grade records, a printable copy of the CBI Student Handbook and of your course syllabus, and other information on your course, including printable copies of optional modules and guidance on selecting optional modules. Your CBI grade records are directly linked to the CBI online glossary to help you understand the definitions of the terms used.

You’ll find several reference items by following the “CBI Reference Shelf” link. The full CBI Policy Handbook is available, searchable from your browser. The CBI Policy Handbook explains the policies in authoritative detail, and gives the rationale behind the policies. A searchable version of the CBI Student Handbook is also there.

To search any web page, click anywhere on the page, then hit <Ctrl-f> or use the Edit menu of your web browser.

Another useful reference item is an interactive CBI points estimator. It helps you understand how many exams you need, and how well you’ll have to do on them, to achieve your grade goals. Other items include the detailed exam point formula, how to calculate whether you can raise your average topic fraction to 50%, and a searchable glossary of CBI terms.
EXAM CBI POINTS

CBI points all are ultimately associated with exams. Here is a simple summary of the calculation of exam points and of Pace points. Pace points earned by taking a particular exam become part of that exam's points.

SIMPLIFIED EXAM POINTS

Exam points (other than Pace): The key to understanding CBI exam points is that they are ALL proportional to the Topic Fraction $t$ (defined on page ?? ).

The table below uses some simplifying assumptions to give the points available for exams with a topic fraction $t$ covering 1, 2, and 3 units.

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<th>exam</th>
<th>perfect</th>
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<tbody>
<tr>
<td>1</td>
<td>1.56t</td>
<td>1.65</td>
</tr>
<tr>
<td>2</td>
<td>3.63t</td>
<td>3.79</td>
</tr>
<tr>
<td>3</td>
<td>5.44t</td>
<td>5.69</td>
</tr>
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The table assumes this is the first exam you have taken covering these units, that you earned maximum communication credit on the exam, had no consultations, had no unprofessional behaviour with staff, submitted no suggestions, and correctly filled out the module questionnaire on the exam. The “perfect” column adds the bonus for exam excellence, getting $t = 100\%$ on an exam.

Pace For a 4-credit course, 13 pace points are available, normally 13/14 points per pace week. We’ve recently switched to evaluating pace for 14 pace weeks, but chose not to raise the points required to achieve a given grade level. For a 3-credit course, only 9.75 pace points are available. There are fewer pace points in courses with fewer credits; shorter courses spread the same total points over fewer weeks. A single exam may possibly earn multiple weeks of pace. Please notice that full pace credit has an impact of greater than 1.0 on a scale of 4.0 upon your final grade.

THE GENERAL EQUATIONS

If you want the whole story, a detailed discussion of the exact exam point formula is available in the CBI Reference Shelf web pages. These web pages also have a discussion of the available points on exams by skill, and their relative contribution. To understand the general equations, you may need to refer back to the How CBI Works section of the Handbook or the CBI glossary on the web.
SKILLS FOR PROFESSIONAL SUCCESS

by

Peter Signell

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   b. Purpose: A List of Skills ..................................... 1
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B. “TESTS TELL US LITTLE ABOUT TALENT” ............... 7
C. “LEVELS OF LEARNING OBJECTIVES” .................... 8
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This is a Developmental Stage Publication

OF PROJECT PHYSNET

THIS IS A DEVELOPMENTAL STAGE PUBLICATION
number of students who are not using these skills habitually.

To improve feedback, we should gather feedback using our process and

It is also with the smaller record of feedback, we were introduced

and academics alike. For this initial meeting, we choose industry

discuss progress in terms of skills. Academic staff should

In summary of the conference

Peter Signell

SKILLS FOR PROFESSIONAL SUCCESS

3. OLD SKILL: CONTENT

help our students learn

be easily read by company Vic-Weissman. This is a skill which we could

Execute Summary

The Executive Summary

counter-experience.

and show the structure of problem solutions in a form useful for readers and

2. SOME IMPLICATIONS FOR INSTRUCTION

thetic or good quality communication and not just follow the procedures?


4. NEW SKILL: SELF-EDUCATING

instructs the reader how to do something. Very few presentations are

the Industry's Problem. The Industry's Problem. The Industry's Problem. The Industry's Problem.
ACKNOWLEDGMENTS

For production next year,

S. NEW SKILL: EVALUATION AND JUDGMENT

Students who applied to the school of Communication

This would also apply to personnel in the field of Communication

4. Academic Research

The majority of representatives suggested that students be taught to

3. EXPERIENCE

The world is an ever improving and changing one, and studies in that field should be taught to

2. PERSONALITY CHANGES

The world is a place of growth and change, and studies in that field should be taught to

1. COLLEGES GET LOW GRADES

The world is a place of growth and change, and students in that field should be taught to

A. "COLLEGES GET LOW GRADES"

These modules are being produced by Project Phystnet.
Presence of a "The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher,"

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," and "The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," together form a cohesive narrative about the challenges faced by students and teachers in a classroom setting.

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher,"

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," presents a scenario where the teacher is portrayed as fearless in their approach to confronting students, particularly when faced with challenging or difficult situations.

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher,"

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," emphasizes the importance of teachers being proactive in addressing issues and providing guidance to students, even when the latter may be hesitant to engage in constructive dialogue.

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher,"

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," suggests that fearlessness is a key trait for effective teaching, as it encourages open communication and fosters a learning environment where students feel supported and challenged.

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher,"

"The Great Teacher Will Not Be Scared to Confront the Student, Who Is Afraid of Confronting the Teacher," illustrates the dynamics of power and authority in educational settings, highlighting the role of teachers as leaders who must be willing to engage in difficult conversations and help students confront their fears and anxieties.
We refer to the latest availability of our production system.

I have tried to work through the process, and we're now in the final stages of our work.

Please see attached documentation for guidance on the development process.

Regarding the materials, I have already reviewed them and am confident in their quality.

I appreciate your attention to this matter.
STUDENT STRATEGIES FOR SUCCESS IN CBI PHYSICS

by

Peter Signell and William C. Lane, Michigan State University

1. START OUT PROPERLY
   a. New Goals, New Strategies ........................................ 1
   b. Use the “Getting Started” Sheet .................................. 1
   c. Study Together ....................................................... 1
   d. Estimate Your Readiness .......................................... 2
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2. KNOW WHY YOU ARE DOING THIS
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   b. Know Why You Must Learn Concepts ........................... 4
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   b. Last Resort: Get Help ............................................. 6

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   b. Look over the Model Exam ....................................... 8

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   c. Get Credit for General Skills .................................. 9

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ACKNOWLEDGMENTS .................................................. 11

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null
Handbook

"So, scalable for professional success?" MISONO 399, in your updated CHI Student.

I. START OUT PROPERLY

Peter Stiegel

IN CBI PHYSICS

Student Strategies for Success

MISONO 185
and colleagues. Instruction is guided by tradition and by strong feedback from experienced instructors, which courses must be available for optional credit. Even more so, the process of developing course curriculum and content is collaborative and includes partnerships with other professionals.

In determining which courses are most relevant to current needs, you need to consider both your own goals and the overall needs of the institution. This process involves identifying the critical areas of focus for each course and aligning them with the overall mission of the institution. This can help ensure that the courses you select are relevant and aligned with the needs of the institution.

To effectively apply the concepts learned in your courses, you need to think critically about the information presented. This involves understanding the underlying principles and being able to apply them in practical situations. It also requires being able to identify and evaluate different perspectives and approaches within the field.

In addition to the formal curriculum, other opportunities for learning may be available within the institution. These could include workshops, seminars, or other informal learning experiences.

The importance of knowing why you are learning physics cannot be overstated. Physics is not only a fundamental discipline that underpins many aspects of technology and science, but it also plays a crucial role in our everyday lives. By understanding the concepts and principles behind physics, you can apply them to a wide range of fields, from engineering and medicine to environmental science and technology.

2. Know why you are learning physics. Physics is not only a fundamental discipline that underpins many aspects of technology and science, but it also plays a crucial role in our everyday lives. By understanding the concepts and principles behind physics, you can apply them to a wide range of fields, from engineering and medicine to environmental science and technology.

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4. USE PROFESSIONAL PROBLEM-SOLVING SKILLS

(3) Offer an understanding of all elements of the document. After reading
the document a few times, check the section's title and read
the first section.

To get an overview of a paragraph, check its heading. The topic
sentence "sets" the direction of a section, check the section's title and read
the first sentence.

To get an overview of a section, check the section's title and read
the first sentence. The topic sentence "sets" the direction of a section, check the section's title and read
the first sentence.

To get an overview of a section, check the section's title and read
the first sentence. The topic sentence "sets" the direction of a section, check the section's title and read
the first sentence.
not provide contributing assistance on Acdex Exam. Do not provide contributing assistance on a section of the Outlook Skills. We do.

If you have issues with your Outlook Skills, you should not rely on the Outlook Exam. The Acdex Exam is to monitor performance in terms of the Outlook Skills. We do not provide contributing assistance on a section of the Outlook Skills. You should not rely on the Outlook Exam.

Go through the Acdex Exam. After studying a lesson, examine

---

5. REVIEW THE LESSON

---

real contributing assis...
6. SHOW SKILLS ON EXAMS

Explain the concept of...
\[
\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd} = \frac{bc + ad}{bd}
\]

2. Problems are first solved for symbolic expressions involving the input:
\[
\frac{a}{b} = d
\]
\[
\frac{c}{d} = y
\]

3. Equations are converted successively to the other:
\[
\frac{a}{b} = d
\]
\[
\frac{c}{d} = y
\]

4. Vector quantities are written as vectors.

5. The topic of your solution must flow only downward on your page.

6. What are common attributes which are generally characteristic of communication?

7. Monitor your progress.

A. Scientific Communication Guide

Appendix A, B, C

12

11
6. Numbers are substituted, with their units, for the input symbols and the units are then reduced to obtain the units of the answer:

\[
d = \frac{1}{2}(32 \text{ ft/s}^2)(2.1 \text{ s})^2 = 70.56 \text{ ft} \Rightarrow 71 \text{ ft}
\]

7. Numerical answers are given to an appropriate number of digits, neither more nor less. A number like 130 must finally be written so as to show its number of significant digits (1.3 \times 10^2 or 1.30 \times 10^2 or ...). If only multiplications and divisions are used to compute the answer, then the final answer should have exactly the number of digits of the least precise of the input parameters (see the examples in #6 above and #10 below). If subtraction is involved, the subtraction must be checked to see if some precision is thereby lost due to cancellation of the leading digits.

8. The situation is sketched, showing the meaning of the symbols used:

9. Assumptions used at the beginning of a problem are clearly stated in both words and equations:

1. I combine Coulomb’s Law: \( \vec{F} = k_e \frac{q_1 q_2}{r^2} \hat{r} \)
and Newton’s Second Law: \( \vec{F} = ma \)
to get ...

10. Equality signs that are part of a derivation sequence, but which begin different lines on the page, lie directly underneath each other:

\[
\begin{align*}
\dot{a} &= k_e \frac{q_1 q_2}{m(a + b)^2} \hat{r} \\
&= \frac{(2.0 \times 10^{-9} \text{ C})(-3.0 \times 10^{-6} \text{ C})(9.0 \times 10^6 \text{ N} \cdot \text{C}^{-2} \cdot \text{m}^2)}{(8.0 \text{ kg}(0.20 \text{ m} + 0.05 \text{ m})^2) \hat{r}} \\
&= -1.08 \text{ N kg}^{-1} \hat{r} = -1.08 \text{ m} \cdot \text{s}^{-2} \hat{r} \\
&\Rightarrow -(1.1 \text{ m/s}^2) \hat{r}
\end{align*}
\]
C-2: EXAM SCORING: AN EXAMPLE

<table>
<thead>
<tr>
<th>Exam Score</th>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

(continued...)

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