PHYSUN 1201: General Physics I
Spring 2025
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MODULES & GRADING

The topics in this course are grouped into 12 “modules” (aka “mods”) which are part of a standard topic list for introductory mechanics courses. Each exam question will be one of two types: “module problems” (or “MPs”), and “integrated problems” (or “IPs”).

MPs assess your competency with the fundamentals from that module. MPs are fairly narrow in scope and targeted to a specific module, but these problems are not completely isolated —- physics is by its nature cumulative. MPs are meant to assess your grasp of the fundamentals and not necessarily your ability to solve complex problems (though problem solving is still a crucial part of MPs).

IPs are more challenging. These questions are freeform and require more problem-solving skill on your part, including setting up a problem-solving approach from top to bottom with little to no scaffolding. IPs touch on topics from multiple modules and ask you to integrate the concepts and/or apply them in new contexts.

Each exam will feature 4 new MPs (Exam 1 will add mods 1-4, Exam 2 will add 5-8, Exam 3 will add 9-12) and 1 new IP that integrates information from all modules on all prior exams. Each Exam grows in length by including another whole set of MPs and IPs from all prior exams. No exam is intended to be finishable in a single sitting. Instead, think of each exam as a “buffet” of available problems from which you can choose what to focus on for that exam (or skip an exam altogether). Once you achieve a particular score on an MP or one of the three types of IPs, you can either re-assess on that problem on a future exam to try to improve your performance (if you get the same or lower score on a future attempt at the same category of problem, that has no impact on your grade — you can only go up over time) or stay put with the score you have. Your final course grade will be determined by a combination of how many distinct question types you attempt and your performance on those questions (details later in this document).

Your final grade is determined by a combination of how many topics you choose to assess on and how well you do on the questions related to that topic (more on the grading scheme below). Consequently, you may choose to focus on fewer topics, spending exam time doing questions originally covered on earlier exams, and trying to improve your score on those topics. In short, you can choose what topics to focus on for each exam in order to try to optimize your final outcome. You do NOT have to learn or even cover every topic in this course to pass with a solid grade or even to get an A (although you do need to do everything — correctly — for an A+).

Below is a list of the modules by broad topic, along with what will appear on each exam:

TOPIC LIST BY EXAM

Module (M) /Integrated (I) Label	Content	Exams on which these problems are available for you to attempt
M1	Relative velocity	Exam 1, Exam 2, Exam 3, Final
M2	Kinematics (1D/2D)	Exam 1, Exam 2, Exam 3, Final
M3	Forces (no friction)	Exam 1, Exam 2, Exam 3, Final
M4	Forces (anything goes)	Exam 1, Exam 2, Exam 3, Final
IA	Integrates material from M1 - M4	Exam 1, Exam 2, Exam 3, Final
M5	Work & Energy	Exam 2, Exam 3, Final
M6	Center of mass	Exam 2, Exam 3, Final
M7	Momentum & collisions	Exam 2, Exam 3, Final
M8	Oscillations	Exam 2, Exam 3, Final
IB	Integrates material from M1 - M8 (emphasis on M5 - M8)	Exam 2, Exam 3, Final
M9	Rotational dynamics with a fixed point	Exam 3, Final
M10	Rotational dynamics w/o a fixed point	Exam 3, Final
M11	Statics & equilibrium	Exam 3, Final
M12	Fluids	Exam 3, Final
IC	Integrates material from M1 - M10 (emphasis on M9 - M10)	Exam 3, Final

GRADING SCHEME

Instead of deducting or awarding points or partial credit, each problem you attempt is assessed holistically and receives one of four scores (listed below from worst to best):

LOST - throwing darts, nothing logical, does not demonstrate any comprehension of the concepts. Should have been left blank.

NEEDS SUBSTANTIAL IMPROVEMENT - fails to connect many pieces; has less than half of logical flow of the solution demonstrates awareness of basics but not much more (writing only formulas does not count); exhibits at least some physical problem-solving competence

GETTING THERE - exhibits solid problem-solving; more than half of the pieces of the solution are in place; you don't get all the way there but make significant progress toward a complete solution

PROFICIENT - well executed, logically correct solution; has an overall logically sound argument (which may be required to be articulated in words). The solution may not be optimal, but it is correct physically, logically, and mathematically (barring very minor errors).

Your final letter grade will be determined by some combination of how many MPs and IPs you tackle and your score on those questions, as detailed in the following chart:

	Integrated Requirements	Module Requirements
A+	3 P	12 P
A	2 P, 3 >= GT	10 P
A-	1 P, 3 >= GT	9 P, 10 >= GT
B+	2 >= GT, 3 >= NI	8 P, 9 >= GT
B	1 >= GT, 2 >= NI	7 P, 9 >= GT
B-	2 >= NI	6 P, 8 >= GT, 9 >= NI
C+	NA	5 P, 7 >= GT, 8 >= NI
C	NA	4 P, 6 >= GT, 8 >= NI
C-	NA	3 P, 6 >= GT, 8 >= NI
D	NA	2 P, 5 >= GT, 7 >= NI
F	NA	if you don't meet the requirements for a D, you get an F

Each grade milestone is like a plateau — once you achieve it, it establishes a floor that you cannot drop below. Your grade in this course can only stay flat or increase with time, but it cannot go down.

BONUSES:

The are two mechanisms to earn bonuses that can improve your course grade:

1) Recitation attendance

Attending recitation sections earns you “boosts”. One boost can be used to increase your score on an MP by one level. two boosts can be used to increase your score on 2 MPs each by one level, or to increase your score on a single MP by two levels, or to increase your score on an IP by one level (“leveling up” an IP costs twice as much as leveling up an MP).

MPs or IPs can only be boosted if they originally receive at least an NI —- “Lost” scores (or unattempted questions) cannot be boosted.

Attending 8 recitations earns 1 boost. Attending 10 recitations earns a 2nd boost.

2) Homework:

Your lowest MP that has received at least an NI can be fully replaced by your equivalent homework score (if that would help you).

The conversion chart is below:

Homework-equivalent score (total homework score at end of semester):

LOST: homework score $<$ 50%

NEEDS SUBSTANTIAL IMPROVEMENT: 50% $\leq$ homework score $<$ 75%

GETTING THERE: 75% $\leq$ homework score $<$ 90%

PROFICIENT: homework score $\geq$ 90%