Homework Requirements

Homework consists of two types of assignments: **Questions** and **Problems**. Both parts are due and will be collected at the on the day of the next quiz. All assigned questions and problems must be attempted for full credit and only the handwritten work submitted in class will count.

The short-answer **Questions** are posted on blackboard. Submissions must be neat, legible, and include the problem statement. The submitted questions will be graded on effort and completeness including any diagrams or sketches requested in the problem or question. Points will be deducted for incomplete submissions.

The numeric **Numbas problems** are also available on Blackboard. These problems are randomly generated, and each student's problems will be unique. The Numbas problems will tell you when you are correct. Your score reported by Numbas is for your information only.

See the syllabus for the complete homework policy, including the late policy.

Numbas Tips

- You will need to download and use the Numbas Lockdown Browser to access the homework. https://www.numbas.org.uk/lockdown-app/

- Mac users may need to grant permission to install the software. See https://www.numbas.org.uk/lockdown-app/mac_security.html

- Answers must be accurate to three significant digits and include correct units.

- Units require proper capitalization. kW not kw or KW; horsepower or hp, not HP, etc.

- For angles, use a degree symbol ° (shift-option-8 on mac) or type *deg*.

- Greek letter π (option-p on mac) can be entered by typing "pi".

- Include a leading zero for numbers like 0.25 or -0.5.

- If you feel that a problem is not working properly or returning the wrong answer, take a screenshot of the problem/answer and let me know so that I can fix it.

Units

Most units are acceptable. Below are some which you may use for electrical problems.

The complete list of accepted units is at: https://numbas.mathcentre.ac.uk/extensions/55/documentation.

Electrical Units
- %, percent
- A, Ampere, amp, ampere, amps
- Ah
- C, Coulomb, coulomb
- d, day, days
- dB, decibel, decibels
- deg, degree, degrees
- dyn, dyne
- F, Farad, farad
- h, hour, hours, hr, hrs
- horsepower, hp
- J, Joule, joule, joules
- lbf, pound-force
- min, mins, minute, minutes
- N, Newton, newton
- Ohm, ohm, Ω
- rad, radian, radians
- rotation
- rpm
- s, sec, second, seconds, secs
- S, Siemens, siemens
- T, tesla, teslas
- V, Volt, volt, volts
- VA, volt-ampere
- VAR, VAr, Var, var, volt-ampere-reactive
- W, watt, watts
- Wb, weber, webers
- Wh

Prefixes
- M, Mega, mega
- k, kilo
- Centi, c, centi
- Milli, m, milli
- Micro, mc, micro, u, µ, μ
- Nano, n, nano

Note: Numbas has no conception of a "turn," so MMF units *ampere-turns* are submitted as *ampere, etc.*