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Week 3
Intention
Goal: What do you want to achieve at the end of Week 3? To get a better understanding on heat transfer with a more in-depth explanation on specific scenarios compared to vague concepts.
Desired Outcomes—learning outcomes I want to achieve in MECH 3228
Based on the content presented on May 26th, discuss the topics that are the most interesting to you and what you want to achieve. I wanted to learn how to simplify the differential equations even further and make a more easier solution process through the use of boundary conditions and cancelling out based on the requirements of the scenario.
Self-Understanding—strengths that I can build on and development needs I can address to be successful in MECH 3228
Strengths: My strengths are notetaking and concentrating in class, which will both be very helpful when studying later for tests/assignments.   Development Needs: Time management outside of class and organizing it so everything is studied as need be.

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LECTURE CONTENT
What is the specified temperature boundary condition?
Steady state since temperature at the boundary condition remains constant with time.
The specified temperature can be constant, which is the case for steady heat conduction or may vary with time.
What is the convection boundary condition?
The heat conduction at the surface in a selected direction is the same the heat convection at the surface in the same direction.
What are the necessary conditions for interface boundary condition?
The two bodies in contact must have the same temperature contact area. An interface cannot store any energy (heat) and therefore the heat flux must be the same on both sides.
Can a problem have more than one boundary condition? If yes, how do account for all boundary conditions?
Yes, this can occur and when this does occur, we account for it as the heat transfer to the surface in all modes on one side would equal to the heat transfer in all modes on the other side. Surface may involve convection, radiation, and specified heat flux which would a surface energy balance.
Explain symmetry boundary condition and insulation boundary condition.
In insulated boundary, one side is insulated with zero heat transfer, while in thermal symmetry a mirror effect occurs in the middle boundary where it reflects the heat transfer of the left and right of the middle boundary.
Discuss the heat flux boundary condition.
With positive heat flux, it corresponds with the positive direction of the coordinate axis and negative being the opposite direction.