CARLETON UNIVERSITY
Department of Civil and Environmental Engineering
SUGGESTED PROBLEMS: CIVE2101 - Mechanics II (Fall 2015)

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Textbooks (Required):
(1) R. C. Hibbeler, *Engineering Mechanics, Statics and Dynamics*, Carleton University Edition, Pearson Prentice Hall, ISBN 1269274414 (*Custom book for Carleton University for CIVE 2101*).
(2) R. C. Hibbeler, *Engineering Mechanics, Statics and Dynamics*, Carleton University Edition, Pearson Prentice Hall, ISBN 9781256973058 (*Custom book for Carleton University for ECOR 1101 (Mechanics I textbook)*).

The problem sheet may undergo revisions. It is highly recommended that students visit this webpage as often as possible for the latest updates.

Suggested Problems

1. Force Systems, Equilibrium: Particles & Bodies (ECOR 1101 book, Chapters 3-5, pages 85-197)
   Problems 3.(4,12,20,40,42,66).
2. Trusses: Method of Joints, Zero Force members (CIVE 2101 book, Chapter 1, pages 3-19)
   Problems 7-8, 20-22, 24-26.
3. Trusses: Method of Sections, Space Trusses (CIVE 2101 book, Chapter 1, pages 20-33)
   Problems 34-36, 40, 44-49, 51-52, 54-56.
4. Friction: Introduction & Basic Problems (CIVE 2101 book, Chapter 2, pages 81-107)
   Problems 5-11, 21, 27-28, 33, 36, 40-42, 44, 52, 54, 57.
5. Friction: Wedges, Threads (CIVE 2101 book, Chapter 2, pages 108-116)
   Problems 59-60, 62-66, 68-70, 74-75, 82.
6. Friction: Clutches, Belt Friction (CIVE 2101 book, Chapter 2, pages 117-145)
   Problems: 87-93, 95-96, 98; 111-112, 114-117.
7. Virtual Work: Particles & Rigid Body (CIVE 2101 book, Chapter 3, pages 149-164)
   Problems 3-8, 10-11, 14, 16, 22, 25.
8. Virtual Work & Potential energy (CIVE 2101 book, Chapter 3, 165-185)
   Problems 32, 34-35, 37-42, 45, 48-49.
9. Review: Particle Kinematics (ECOR 1101 book, Chapter 9, pages 363-465)
   Problems F9.(34-37), 9.(171-173, 180-181, 184, 185-186).
10. Review: Particle Kinetics (ECOR 1101 book, Chapter 10, pages 367-516)
    Problems 10.(92, 94, 98, 104, 107-108).
11. Review: Energy & Momentum (ECOR 1101 book, Chapter 11-12, pages 519-641)
    Problems 11.(8-9, 12, 20, 34, 80-81, 84, 86, 88, 92). 12.(33, 36, 45, 50).

12. Planar Kinematics: Translation & Rotation (CIVE 2101 book, Chapter 4, pages 189-214)
    Problems F3, F4, 30, 34, 36-37, 48-50, 53.

13. General motion: Velocities (CIVE 2101 book, Chapter 4, pages 215-228)
    Problems 58-59, 61, 63-64, 69-70.

14. Instantaneous centre (CIVE 2101 book, Chapter 4, pages 229-240)
    Problems 82-86, 88, 94, 102.

15. General motion: Acceleration (CIVE 2101 book, Chapter 4, pages 241-254)
    Problems 103-105, 108-109, 114-115, 119.

16. Sliding contacts (Absolute motion analysis) (CIVE 2101 book, Chapter 4, pages 255-280)
    Problems 137, 140.

17. Moving Reference Frames (Rotating Axes) (CIVE 2101 book, Chapter 4, pages 255-280)
    Problems 145.

18. Moment of Inertia (CIVE 2101 book, Chapter 5, pages 283-296)
    Problems 1-7, 9, 11, 14.

19. Planar Kinetics: Equations of motion (CIVE 2101 book, Chapter 5, pages 297-312)
    Problems 31, 32, 39, 43-44, 48.

20. Planar Kinetics: Rotation about a fixed axis (CIVE 2101 book, Chapter 5, pages 313-327)
    Problems F9, 59-60, 63-65, 67, 72-73, 83, 85-86, 89.

21. Planar Kinetics: General Plane motion (CIVE 2101 book, Chapter 5, pages 328-346)
    Problems 101-102, 108, 110, 112, 114-115, 119-120.

22. Work and Energy (CIVE 2101 book, Chapter 6, pages 347-390)
    Problems 17, 21, 27, 32, 35, 43, 49, 53, 55, 59, 61, 63, 68.

23. Impulse and Momentum (CIVE 2101 book, Chapter 7, pages 393-420)
    Problems 4, 8, 9, 12-15, 22, 27.

24. Impacts (CIVE 2101 book, Chapter 7, pages 421-433)
    Problems 36, 39-41, 51-52, 54-55.