# Undergraduate Mathematics

Linear Algebra
September 2021 - May 2022

## References

[FIS] Linear Algebra, 4th edition, Friedberg, Insel, Spence.
[Lam] Introduction to Quadratic Forms over Fields.

## Semester 1

| Homework 1 | [FIS] Sec 1.2: 13, 19, 20, 22.<br>[FIS] Sec 1.3: 23, 31.<br>[FIS] Sec 1.4: 10, 14.<br>[FIS] Sec 1.5: 20. |
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| Homework 2 | [FIS] Sec 1.6: 31, 32, 35. |
| Homework 3 | No submission required:<br>[FIS] Sec 2.1: 3, 11, 13, 14, 31.<br>[FIS] Sec 2.2: 2, 9, 11, 13, 15. |
| Homework 4 | [FIS] Sec 2.3: 3, 13, 16, 18. |
| Homework 5 | No submission required:<br>[FIS] Sec 2.4: 2, 6, 7, 16, 17, 20, 21.<br>[FIS] Sec 2.5: 11, 14. |
| Homework 6 | [FIS] Sec 3.1: 6, 12.<br>[FIS] Sec 3.2: 14, 15.<br>Reading assignment: Theorem 3.16 |
| Homework 7 | No submission required:<br>[FIS] Sec 4.2: 4, 23.<br>[FIS] Sec 4.3: 10, 11, 13, 20, 21, 22, 25, 27.<br>[FIS] Sec 4.5: 16. |
| Homework 8 | No submission required. |

| | [FIS] Sec 5.1: 7, 9, 20, 21.<br>[FIS] Sec 5.2: 9, 11, 12. |
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| Homework 9 | Submission required:<br>[FIS] Sec 5.4: 19, 20, 23.<br><br>No submission required:<br>[FIS] Sec 5.2: 18, 22.<br>[FIS] Sec 5.4: 11, 13, 17, 24, 26. |
| Homework 10 | No submission required:<br>[FIS] Sec 7.1: 2, 3, 5, 13. |
| Homework 11 | Please finish and submit four exercises in the attachment.<br><br>No submission required:<br>[FIS] Sec 7.2: 3,18,19,20,22,23. |
| Homework 12 | As shown in the attachment, no submission required. |

Homework: As shown in the attachments.

No submission required for extra exercises:

| Extra Exercises 1 | As shown in the attachment. |
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| Extra Exercises 2 | [FIS] Sec 6.1: 11, 15, 20.<br>[FIS] Sec 6.2: 6, 7, 8, 10, 15, 16. |
| Extra Exercises 3 | [FIS] Sec 6.3: 6, 8, 10, 11, 12, 15, 17, 18, 24(optional). |
| Extra Exercises 4 | [FIS] Sec 6.4: 4, 7, 8, 9, 10, 13, 14(optional), 17, 18. |
| Extra Exercises 5 | [FIS] Sec 6.5: 10, 18, 21, 23, 31, 32.<br>[FIS] Sec 6.6: 6, 7, 10. |
| Extra Exercises 6 | [FIS] Sec 6.7: 3, 6, 9, 15, 16, 26, 27.<br>[FIS] Sec 6.8: 7, 16, 17, 24, 26. |
| Extra Exercises 7 | [Lam] Chapter I, ex. 2, 5, 12 ,16. |