**Math H2E, Spring 2020, Tentative Schedule**

**Text:** *Vector calculus, linear algebra, and differential forms*, Hubbard and Hubbard, 5th Edition

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| **Lecture** | **Section** | **Topic** |
| 1 | 4.1 | Defining the integral |
| 2 |  |  |
| 3 | 4.5 | Fubini's theorem and iterated integrals |
| 4 |  |   |
| 5 | 4.7  | Other pavings |
| 6 | 4.8, 4.9 | Determinants (review), Volumes |
| 7 | 4.10 | The change of variables formula |
| 8 |  |  |
| 9 | 5.1 | Parallelograms and their volumes |
| 10 | 5.2 | Parametrizations |
| 11 | 5.3 | Computing volumes of manifolds |
| 12 |  |  |
| 13 |  |  |
| 14 |  | **Midterm**  |
| 15 | 6.1 | Forms on R^n |
| 16 | 6.2 | Integrating form fields over parametrized domains |
| 17 |  |  |
| 18 | 6.3 | Orientation of manifolds |
| 19 | 6.4 | Integrating forms over oriented manifolds |
| 20 | 6.5 | Forms in the language of vector calculus |
| 21 |  |  |
| 22 | 6.6, 6.7 | Boundary orientation, The exterior derivative |
| 23 | 6.8 | Grad, curl, div, and all that |
| 24 |  |  |
| 25 | 6.10 | Generalized Stokes' theorem  |
| 26 | 6.11 | The integral theorems of vector calculus |
| 27 |  |  |
| 28 |  | Catch-up and review |
| 29 |  | Catch-up and review |