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| **Faculty Information** | **Name** | Jinwook Jung |
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| **Home University** | Hanyang University |
| **Department** | Department of Mathematics |
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| **Course Information** | **Class No.** | TBA | **Course Code** | GEN2053 | **Credits** | 3 |
| **Course Name** | Calculus 2 |
| **Lecture Schedule** | Mon-Fri / 09:00 – 12:00 & 13:00 - 15:00 |
| **Course Description** | This course builds on Calculus 1 and introduces key concepts in Calculus and analytic geometry, including functions of several variables, partial derivatives, and multiple integrals. |
| **Course Objective** | 1. Introduce the concept of partial derivatives and multiple integrals
2. Provide students with the ability to understand mathematical tools used in diverse context
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| **Prerequisite** | * Calculus 1
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| **Materials/Textbooks** | Essential Calculus: Early Transcendentals(2nd edition) by J. Stewart |
| **Evaluation** | **Attendance** | 10 % | **Quiz** | 10 % |
| **Assignment** | % | **Mid-term Exam** | 40 % |
| **Presentation** | % | **Final Exam** | 40 % |
| **Group Project** | % | **Participation** | % |
| **Etc.** | **Evaluation Item** | **Ratio** |
|  | % |
|  | % |
| **Daily** **Lecture Plan** | **Day 1** | Introduction of the course; Vector functions and space curves; Arc length and curvature; Functions of several variables |
| **Day 2** | Limits and continuity; Partial derivatives; Tangent planes and linear approximation; The chain rule |
| **Day 3**  | Quiz #1; Directional derivatives and the gradient vector; Maximum and minimum values; Lagrange multiplier |
| **Day 4** | Double integrals over rectangles; Double integrals over general regions; Q&A session |
| **Day 5** | Mid-term; Double integrals in polar coordinates; Triple integrals |
| **Day 6** | Triple integrals in cylindrical coordinates; Triple integrals in spherical coordinates; Vector fields; Line integrals |
| **Day 7** | Quiz #2; The fundamental theorem for line integrals; Green’s theorem; Curl and divergence; Parametric surfaces and their areas |
| **Day 8** | Surface integrals; Stokes’ theorem; The divergence theorem; Q&A |
| **Day 9** | Final |