

表九之一 110學年度適用

貳、課程教學計畫

| 1、教學目標 | <p>理解極限的概念，熟練微分與積分的計算技巧與理論的推演，並能將微分與積分理論應用於各類不同領域的問題分析。</p> <p>In this class, the concepts of the limit theory are introduced first. In addition to introduce the developments of the differentiation based on the limit theory, this course is designed to help students to get proficiency in computational techniques. After this course, students will realize the applications of calculus in other science fields and be able to apply the differentiation and integration theory to deal with the real-world problems.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----|------|------------------------|--|----|----|--|----|----|-----|---|----------------------|--|------|------|---|----------------------|--|------|--|---|----------------------|--|------|--|---|-------------|--|------|------|---|-------------|--|------|------|---|-------------|--|------|--|---|----------------------------------|--|------|--|---|----------------------------------|--|------|------|---|----------------------------------|--|------|------|----|-----------|--|------|--|----|-----------|--|------|--|----|-----------|--|------|--|----|-----------------------------|--|------|------|----|-----------------------------|--|------|------|----|-----------------------------|--|------|--|----|-------------------|--|------|--|----|-------------------|--|------|------|----|-------------------|--|------|------|--|
| 2、修讀對象 | <p>微積分(上)未通過之大學部學生、未獲微積分抵免之轉學生 (註:請詳述修讀對象之條件,如:建議先修科目、先備條件與能力等。)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>3、課程內容大綱與教學進度</p> <p>說明： 1. 須授滿十八週課程（畢業班下學期為十四週）。 2. 請於期末學期考試前，安排一次 Moodle 平台線上課堂反應問卷填寫。 3. 遠距教學課程授課時數包含課程講授(影音教材)、師生互動討論、線上測驗、作業同儕互評等互動方式。</p> | <table border="1"> <thead> <tr> <th rowspan="3">週</th> <th rowspan="3">課程進度</th> <th colspan="3">授課方式及時數 (請填時數，無則免填)</th> </tr> <tr> <th colspan="2">遠距</th> <th rowspan="2">面授</th> </tr> <tr> <th>同步</th> <th>非同步</th> </tr> </thead> <tbody> <tr><td>1</td><td>Functions and Limits</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>2</td><td>Functions and Limits</td><td></td><td>4hrs</td><td></td></tr> <tr><td>3</td><td>Functions and Limits</td><td></td><td>4hrs</td><td></td></tr> <tr><td>4</td><td>Derivatives</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>5</td><td>Derivatives</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>6</td><td>Derivatives</td><td></td><td>4hrs</td><td></td></tr> <tr><td>7</td><td>Applications of Differentiations</td><td></td><td>4hrs</td><td></td></tr> <tr><td>8</td><td>Applications of Differentiations</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>9</td><td>Applications of Differentiations</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>10</td><td>Integrals</td><td></td><td>4hrs</td><td></td></tr> <tr><td>11</td><td>Integrals</td><td></td><td>4hrs</td><td></td></tr> <tr><td>12</td><td>Integrals</td><td></td><td>4hrs</td><td></td></tr> <tr><td>13</td><td>Applications of Integration</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>14</td><td>Applications of Integration</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>15</td><td>Applications of Integration</td><td></td><td>4hrs</td><td></td></tr> <tr><td>16</td><td>Inverse Functions</td><td></td><td>4hrs</td><td></td></tr> <tr><td>17</td><td>Inverse Functions</td><td></td><td>2hrs</td><td>2hrs</td></tr> <tr><td>18</td><td>Inverse Functions</td><td></td><td>2hrs</td><td>2hrs</td></tr> </tbody> </table> | 週 | 課程進度 | 授課方式及時數 (請填時數，無則免填) | | | 遠距 | | 面授 | 同步 | 非同步 | 1 | Functions and Limits | | 2hrs | 2hrs | 2 | Functions and Limits | | 4hrs | | 3 | Functions and Limits | | 4hrs | | 4 | Derivatives | | 2hrs | 2hrs | 5 | Derivatives | | 2hrs | 2hrs | 6 | Derivatives | | 4hrs | | 7 | Applications of Differentiations | | 4hrs | | 8 | Applications of Differentiations | | 2hrs | 2hrs | 9 | Applications of Differentiations | | 2hrs | 2hrs | 10 | Integrals | | 4hrs | | 11 | Integrals | | 4hrs | | 12 | Integrals | | 4hrs | | 13 | Applications of Integration | | 2hrs | 2hrs | 14 | Applications of Integration | | 2hrs | 2hrs | 15 | Applications of Integration | | 4hrs | | 16 | Inverse Functions | | 4hrs | | 17 | Inverse Functions | | 2hrs | 2hrs | 18 | Inverse Functions | | 2hrs | 2hrs | |
| 週 | 課程進度 | | | 授課方式及時數 (請填時數，無則免填) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 遠距 | | 面授 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 同步 | 非同步 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Functions and Limits | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Functions and Limits | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Functions and Limits | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Derivatives | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Derivatives | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Derivatives | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Applications of Differentiations | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Applications of Differentiations | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Applications of Differentiations | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Integrals | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Integrals | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Integrals | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Applications of Integration | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Applications of Integration | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Applications of Integration | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Inverse Functions | | 4hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Inverse Functions | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Inverse Functions | | 2hrs | 2hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1、教學方式（可複選） | <p><input checked="" type="checkbox"/>提供課程主要及補充教材</p> <p><input checked="" type="checkbox"/>提供非同步教學，次數： <u>18</u> 次，總時數： <u>54</u> 小時</p> <p><input type="checkbox"/>無須安排學校教室及授課時間(須全程為非同步教學課程方可勾選)</p> <p><input type="checkbox"/>提供同步教學，次數： <u> </u> 次，總時數： <u> </u> 小時</p> <p><input checked="" type="checkbox"/>提供面授教學，次數： <u>9</u> 次，總時數： <u>18</u> 小時</p> <p><input type="checkbox"/>其他，請說明：</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2、課程進行時預計使用的學習管理系統功能（可複選） | <p>使用系統</p> <p><input checked="" type="checkbox"/>本校 Moodle 數位學習平台</p> <p><input type="checkbox"/>其他系統_____ (1. 須提供審查單位登入帳號密碼及權限 2. 學生名單及授課大綱須自行處理)</p> <p>課程內容</p> <p><input checked="" type="checkbox"/>課程簡介 <input checked="" type="checkbox"/>課程安排 <input checked="" type="checkbox"/>教材目錄 <input checked="" type="checkbox"/>測驗/考試 <input type="checkbox"/>作業/報告</p> <p><input type="checkbox"/>其他，請說明：</p> <p>課程資訊</p> <p><input checked="" type="checkbox"/>最新消息 <input checked="" type="checkbox"/>課程公告 <input type="checkbox"/>常見問題 <input type="checkbox"/>同學資訊 <input type="checkbox"/>修課排行</p> <p><input checked="" type="checkbox"/>成績資訊 <input type="checkbox"/>其他，請說明：</p> <p>課程互動</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

表九之一 110學年度適用

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|----------------------|---|
| | <input checked="" type="checkbox"/> 課程討論 <input checked="" type="checkbox"/> 線上討論（即時） <input type="checkbox"/> 群組討論 <input type="checkbox"/> 議題討論 <input type="checkbox"/> 郵件討論 <input type="checkbox"/> 問卷投票 <input type="checkbox"/> 其他，請說明： |
| 3、師生互動討論方式 | 教師線上互動時間：_____ 每星期安排2小時 教師課輔時間：_____ 每星期安排2小時 E-mail 信箱及分機：_____ chsunwu@scu.edu.tw 3627 課程助教及通訊方式：_____ <u>需要課程助教 e-mail</u> 其他，請說明： （註：教育部目前尚未採計 FB 與 Line 的師生互動討論時數。） |
| 4、作業繳交方式 （可複選） | <input checked="" type="checkbox"/> 提供線上說明作業內容 <input type="checkbox"/> 線上即時作業填答 <input checked="" type="checkbox"/> 作業檔案上傳及下載 <input type="checkbox"/> 報告 <input type="checkbox"/> 其他，請說明： |
| 5、評量方式及成績分配 （可複選） | <input checked="" type="checkbox"/> 期中考試：_____ 40 % <input checked="" type="checkbox"/> 期末考試：_____ 40 % <input checked="" type="checkbox"/> 平時作業：_____ 10 % <input type="checkbox"/> 線上小考：_____ % <input type="checkbox"/> 出席出勤：_____ % <input checked="" type="checkbox"/> 線上互動：_____ 10 %（註） <input type="checkbox"/> 其他（請說明：_____）：_____ % （註：學生參與課程討論互動情形務必納入學期成績評量之一） |
| 6、上課注意事項 | 請同學務必確實觀看授課影片 請同學有任何問題務必請教老師或助教 請同學務必好好練習作業題目 |
| 7、教材及參考資料 | 指定教科書 James Stewart: Calculus, 9 edition, 2021, Cengage Learning. |

附註：

1. 本遠距教學課程經教務會議核定通過後，校務行政系統中之授課計畫上傳作業，仍請教師自行處理。
2. 依「東吳大學課堂反應問卷」第三條，遠距教學課程原則於「Moodle 數位學習平台」進行線上施測。