

**INSTITUTO POLITECNICO NACIONAL**  
**CENTRO DE INVESTIGACION Y DESARROLLO DE TECNOLOGIA DIGITAL**  
**PROGRAMA DE MAESTRIA EN CIENCIAS EN SISTEMAS DIGITALES**

| SEMESTRE I              | SEMESTRE II  | SEMESTRE III        | SEMESTRE IV      |  |   |   |                        |      |  |   |  |                         |      |  |   |
|-------------------------|--|---------------------|------------------|--|---|---|------------------------|------|--|---|--|-------------------------|------|--|---|
| OPTATIVA I              | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SEMINARIO ACADEMICO</td> <td style="width: 20%; text-align: center;">3983</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> </tr> </table> | SEMINARIO ACADEMICO | 3983             |  | 2 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SEMINARIO ACADEMICO II</td> <td style="width: 20%; text-align: center;">3984</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> </tr> </table> | SEMINARIO ACADEMICO II | 3984 |  | 2 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SEMINARIO ACADEMICO III</td> <td style="width: 20%; text-align: center;">3985</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> </tr> </table> | SEMINARIO ACADEMICO III | 3985 |  | 2 |
| SEMINARIO ACADEMICO     | 3983   |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
|                         | 2  |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
| SEMINARIO ACADEMICO II  | 3984   |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
|                         | 2  |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
| SEMINARIO ACADEMICO III | 3985   |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
|                         | 2  |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
| OPTATIVA II             | OPTATIVA V   | OPTATIVA VIII       | TRABAJO DE TESIS |  |   |   |                        |      |  |   |  |                         |      |  |   |
| OPTATIVA III            | OPTATIVA VI  | TRABAJO DE TESIS    |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
| OPTATIVA IV             | OPTATIVA VII   |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |
| REGISTRO DE TESIS       | TRABAJO DE TESIS   |                     |                  |  |   |   |                        |      |  |   |  |                         |      |  |   |

JULIO 2010

**OPTATIVAS**

|   |   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|---|---|---------|--|---|---|---|---------|--|---|---|--|---------|--|---|---|---|---------|--|---|
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">CONTROL AVANZADO</td> <td style="width: 20%; text-align: center;">3496</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                               | CONTROL AVANZADO                            | 3496    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">TEORIA DEL CONTROL LINEAL Y NO LINEAL</td> <td style="width: 20%; text-align: center;">3371</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                              | TEORIA DEL CONTROL LINEAL Y NO LINEAL                           | 3371    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">TELECOMUNICACIONES</td> <td style="width: 20%; text-align: center;">3498</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>   | TELECOMUNICACIONES   | 3498    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">METODOS NUMERICOS PARA ELECTRODINAMICA</td> <td style="width: 20%; text-align: center;">3997</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>           | METODOS NUMERICOS PARA ELECTRODINAMICA        | 3997    |  | 8 |
| CONTROL AVANZADO  | 3496  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| TEORIA DEL CONTROL LINEAL Y NO LINEAL   | 3371  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| TELECOMUNICACIONES  | 3498  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| METODOS NUMERICOS PARA ELECTRODINAMICA  | 3997  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">MICROONDAS</td> <td style="width: 20%; text-align: center;">3166</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                     | MICROONDAS                                  | 3166    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">CONTROL DE ROBOTS MANIPULADORES</td> <td style="width: 20%; text-align: center;">02A4161</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                 | CONTROL DE ROBOTS MANIPULADORES                                 | 02A4161 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">REDES DE TELECOMUNICACIONES</td> <td style="width: 20%; text-align: center;">3500</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                  | REDES DE TELECOMUNICACIONES                                  | 3500    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">MÉTODOS NUMERICOS PARA ELECTRODINAMICA II</td> <td style="width: 20%; text-align: center;">05A4588</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>     | MÉTODOS NUMERICOS PARA ELECTRODINAMICA II     | 05A4588 |  | 8 |
| MICROONDAS  | 3166  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| CONTROL DE ROBOTS MANIPULADORES   | 02A4161                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| REDES DE TELECOMUNICACIONES   | 3500  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| MÉTODOS NUMERICOS PARA ELECTRODINAMICA II   | 05A4588                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SISTEMAS DIGITALES</td> <td style="width: 20%; text-align: center;">3492</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                             | SISTEMAS DIGITALES                          | 3492    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SINCRONIZACION DE SISTEMAS CAOTICOS Y METODOS DE ENCRIPCIÓN POR</td> <td style="width: 20%; text-align: center;">02A4162</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table> | SINCRONIZACION DE SISTEMAS CAOTICOS Y METODOS DE ENCRIPCIÓN POR | 02A4162 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">VISION, PROCESAMIENTO E INTERPRETACION DE IMÁGENES DIGITALES</td> <td style="width: 20%; text-align: center;">3575</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table> | VISION, PROCESAMIENTO E INTERPRETACION DE IMÁGENES DIGITALES | 3575    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">PROBABILIDAD ESTIMACION Y FILTRADO</td> <td style="width: 20%; text-align: center;">2097</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>               | PROBABILIDAD ESTIMACION Y FILTRADO            | 2097    |  | 8 |
| SISTEMAS DIGITALES  | 3492  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| SINCRONIZACION DE SISTEMAS CAOTICOS Y METODOS DE ENCRIPCIÓN POR   | 02A4162                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| VISION, PROCESAMIENTO E INTERPRETACION DE IMÁGENES DIGITALES  | 3575  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| PROBABILIDAD ESTIMACION Y FILTRADO  | 2097  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">COMPUTACIÓN PARALELA Y DISTRIBUIDA</td> <td style="width: 20%; text-align: center;">07B5264</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>          | COMPUTACIÓN PARALELA Y DISTRIBUIDA          | 07B5264 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">PROCESAMIENTO DIGITAL DE SEÑALES</td> <td style="width: 20%; text-align: center;">10A5846</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                | PROCESAMIENTO DIGITAL DE SEÑALES                                | 10A5846 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">RADIOENLACES</td> <td style="width: 20%; text-align: center;">3378</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>   | RADIOENLACES   | 3378    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">MATEMATICAS AVANZADAS</td> <td style="width: 20%; text-align: center;">3491</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                            | MATEMATICAS AVANZADAS                         | 3491    |  | 8 |
| COMPUTACIÓN PARALELA Y DISTRIBUIDA  | 07B5264                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| PROCESAMIENTO DIGITAL DE SEÑALES  | 10A5846                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| RADIOENLACES  | 3378  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| MATEMATICAS AVANZADAS   | 3491  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">CONTROL ROBUSTO</td> <td style="width: 20%; text-align: center;">3270</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                | CONTROL ROBUSTO                             | 3270    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">METODOS MODERNOS DE ANALISIS ESPECTRAL</td> <td style="width: 20%; text-align: center;">3377</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                             | METODOS MODERNOS DE ANALISIS ESPECTRAL                          | 3377    |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">PROCESAMIENTO DE VIDEO</td> <td style="width: 20%; text-align: center;">07B5263</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                    | PROCESAMIENTO DE VIDEO                                       | 07B5263 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">TOPICOS DE INVESTIGACION I</td> <td style="width: 20%; text-align: center;">3490</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> </tr> </table>                       | TOPICOS DE INVESTIGACION I                    | 3490    |  | 2 |
| CONTROL ROBUSTO   | 3270  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| METODOS MODERNOS DE ANALISIS ESPECTRAL  | 3377  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| PROCESAMIENTO DE VIDEO  | 07B5263                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| TOPICOS DE INVESTIGACION I  | 3490  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 2   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">SISTEMAS NEURODIFUSOS</td> <td style="width: 20%; text-align: center;">04B4561</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                       | SISTEMAS NEURODIFUSOS                       | 04B4561 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">CONTROL DE SISTEMAS LINEALES</td> <td style="width: 20%; text-align: center;">07B5265</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                    | CONTROL DE SISTEMAS LINEALES                                    | 07B5265 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">ESTANCIA DE INVESTIGACION</td> <td style="width: 20%; text-align: center;">01B4047</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                                 | ESTANCIA DE INVESTIGACION                                    | 01B4047 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">TOPICOS DE INVESTIGACION II</td> <td style="width: 20%; text-align: center;">3563</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> </tr> </table>                      | TOPICOS DE INVESTIGACION II                   | 3563    |  | 2 |
| SISTEMAS NEURODIFUSOS   | 04B4561                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| CONTROL DE SISTEMAS LINEALES  | 07B5265                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| ESTANCIA DE INVESTIGACION   | 01B4047                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| TOPICOS DE INVESTIGACION II   | 3563  |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 2   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">ANÁLISIS Y CONTROL DE SISTEMAS DISCONTINUOS</td> <td style="width: 20%; text-align: center;">09A5584</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table> | ANÁLISIS Y CONTROL DE SISTEMAS DISCONTINUOS | 09A5584 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">METODOS DE OPTIMIZACION</td> <td style="width: 20%; text-align: center;">09A5744</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>   | METODOS DE OPTIMIZACION   | 09A5744 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">PROCESAMIENTO DIGITAL DE IMÁGENES</td> <td style="width: 20%; text-align: center;">10A5847</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table>                         | PROCESAMIENTO DIGITAL DE IMÁGENES                            | 10A5847 |  | 8 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">TOPICOS SELECTOS DE PROCESAMIENTO DE IMAGENES</td> <td style="width: 20%; text-align: center;">10A6022</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> </tr> </table> | TOPICOS SELECTOS DE PROCESAMIENTO DE IMAGENES | 10A6022 |  | 8 |
| ANÁLISIS Y CONTROL DE SISTEMAS DISCONTINUOS   | 09A5584                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| METODOS DE OPTIMIZACION   | 09A5744                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| PROCESAMIENTO DIGITAL DE IMÁGENES   | 10A5847                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
| TOPICOS SELECTOS DE PROCESAMIENTO DE IMAGENES   | 10A6022                                     |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |
|   | 8   |         |  |   |   |   |         |  |   |   |  |         |  |   |   |   |         |  |   |