Joint Manipal – WSU M.S. Programs

Manipal VLSI Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. EDA 601: Data Structures and Algorithms + Lab*
2. EDA 602: Digital Signal Processing + lab
3. EDA 603: High Level Digital Design + Lab
4. EDA 604: Advanced VLSI Design + Lab
5. EDA 605: Digital Systems & VLSI Design + Lab
6. EDA 608: Low Power VLSI Design + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CEG 7350: Computer Architecture or CEG 7450: Advanced Computer Networks
3. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
4. Three more courses at 7000 level in CS or CEG or 9 hours of thesis.

To receive a master’s degree in Computer Science from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CS 7200: Algorithm Design and Analysis or CS 7220: Computability and Complexity
3. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
4. CS 7700: Advanced Database Systems
5. Two more courses at 7000 level in CS or 6 hours of thesis.

To receive a master’s degree in Cyber Security from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CEG 6400 Computer Network Security
3. CEG 6420 Host Computer Security
4. CEG 7200 Information Security
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State. Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* EDA 601 and CEG 6350 are undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
Joint Manipal – WSU M.S. Programs

Manipal VIR Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. VIR 601: Data Structures and Algorithms + Lab*
2. VIR 602: Advanced Operating Systems + Lab
3. VIR 603: Operating Systems + lab*
4. VIR 604: Multicore Program Optimization + Lab
5. VIR 605: Computer Networks + Lab
6. VIR 606: Cloud Computing + Lab
7. VIR 611: Virtualization + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 7350: Computer Architecture or CEG 7450: Advanced Computer Networks
2. CEG 7030: VLSI Design Synthesis & Optimization or CEG 7360: Embedded Systems
3. Three more courses at 7000 level in CEG or 9 hours of thesis in CEG.

To receive a master’s degree in Computer Science from Wright State, the students will take:
1. CS 7200: Algorithm Design and Analysis or CS 7220: Computability and Complexity
2. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
3. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
4. Two more courses at 7000 level in CS or 6 more hours of thesis in CS.

To receive a master’s degree in Cyber Security from Wright State, the students will take:
1. CEG 6400 Computer Network Security
2. CEG 6420 Host Computer Security
3. CEG 7200 Information Security
4. One course from the cyber security domain area.
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State. Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* VIR 601 and VIR 603 are equivalent of undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
Joint Manipal – WSU M.S. Programs

Manipal ESD Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. ESD 601: Data Structures and Algorithms + Lab*
2. ESD 603: Real Time Operating Systems + lab
3. ESD 607: Computer Architecture + Lab
4. ESD 608: Embedded System Design + Lab
5. ESD 609: Design with Microcontrollers + Lab
6. EDA 610: System Software + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
2. Four more courses at 7000 level in CS or CEG, or one more course at 7000 level in CS or CEG plus 9 hours of thesis.

To receive a master’s degree in Computer Science from Wright State, the students will take:

1. CS 7200: Algorithms Design and Analysis or CS 7220: Computability and Complexity
2. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
3. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
4. Two more courses at 7000 level in CS or 6 hours of thesis.

To receive a master’s degree in Cyber Security from Wright State, the students will take:

1. CEG 6400 Computer Network Security
2. CEG 6420 Host Computer Security
3. CEG 7200 Information Security
4. One more course from the MS in Cyber Security Program
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State. Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* ESD 601 and CEG 6350 are undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
Joint Manipal – WSU M.S. Programs

Manipal ESI Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. ESI 601: Data Structures and Algorithms + Lab*
2. ESI 603: System Software + lab
3. ESI 604: Specific Instrumentation + Lab
4. ESI 605: Embedded Systems Design + Lab
5. ESI 610: System Control + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CEG 7350: Computer Architecture or CEG 7450: Advanced Computer Networks
3. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
4. Three more courses at 7000 level in CS or CEG, or 9 hours of thesis.

To receive a master’s degree in Computer Science from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CS 7200: Algorithm Design and Analysis or CS 7220: Computability and Complexity
3. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
4. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
5. Two more courses at 7000 level in CS or 6 hours of thesis.

To receive a master’s degree in Cyber Security from Wright State, the students will take:

1. CEG 6350 OS Internals and Design*
2. CEG 6400 Computer Network Security
3. CEG 6420 Host Computer Security
4. CEG 7200 Information Security
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State. Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* ESI 601 and CEG 6350 are undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
Joint Manipal – WSU M.S. Programs

Manipal EWT Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. EWT 601: Data Structures and Algorithms + Lab*
2. EWT 603: RealTime Operating Systems + lab*
3. EWT 605: Advanced Programming + Lab
4. EWT 607: Advanced Computer Networks + Lab
5. EWT 602: Mobile OS and Applications + Lab
6. EWT 602: Mobile AdHoc Networks + Lab
7. EWT 606: Computer Architecture and Organization + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 7370 Distributed Computing OR CS 7700 Advanced Database Systems
2. CEG 7030: VLSI Design Synthesis & Optimization or CEG 7360: Embedded Systems
3. Three more courses at 7000 level in CEG (including 6 hours of thesis in CEG).

To receive a master’s degree in Computer Science from Wright State, the students will take:

1. CS 7200: Algorithm Design and Analysis or CS 7220: Computability and Complexity
2. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
3. Three more courses at 7000 level in CS (including 6 hours of thesis in CS).

To receive a master’s degree in Cyber Security from Wright State, the students will take:

1. CEG 6400 Computer Network Security
2. CEG 6420 Host Computer Security
3. CEG 7200 Information Security
4. One course from the cyber security domain area.
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* EWT 601 and EWT 603 are equivalent of undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
Joint Manipal – WSU M.S. Programs

Manipal MMS Program -> WSU CEG, CS, CyS Programs

A joint Manipal – Wright State M.S. program allows students to spend one year at Manipal and one year at Wright State. At Manipal, the students will take the following courses:

1. MMS 601: Data Structures and Algorithms + Lab*
2. MMS 607: Software Engineering + Lab
3. MMS 609: Computer Networks + Lab
4. MMS 604: Database Programming in Java + Lab
5. MMS 61: Dot Net Technologies + Lab
6. MMS 614: Mobile Application Development using Android + Lab

To receive an M.S. degree in Computer Engineering from Wright State, the students will take:

1. CEG 7350: Computer Architecture or CEG 7450: Advanced Computer Networks
2. CEG 7030: VLSI Design Synthesis & Optimization or CEG 7360: Embedded Systems
3. Four more courses at 7000 level in CEG (including 6 hours of thesis in CEG).

To receive a master’s degree in Computer Science from Wright State, the students will take:

1. CS 7200: Algorithm Design and Analysis or CS 7220: Computability and Complexity
2. CS 7100: Advanced Programming Languages or CS 7140: Advanced Software Engineering
3. CEG 7370: Distributed Computing or CS 7700: Advanced Database Systems
4. Three more courses at 7000 level in CS (including 6 hours of thesis in CS).

To receive a master’s degree in Cyber Security from Wright State, the students will take:

1. CEG 6400 Computer Network Security
2. CEG 6420 Hos: Computer Security
3. CEG 7200 Information Security
4. One course from the cyber security domain area.
5. Six hours of capstone project or thesis.

According to university policy, at least half of the credits used to meet a degree requirement must be earned at Wright State University.

A student is required to maintain a minimum grade-point average of 3.0 out of 4.0 both at Manipal and at WSU to earn a master’s degree at WSU. The minimum grade required to count a course towards the graduation requirement is a C. Up to two courses with a grade of C can be transferred to Wright State. Students with a GPA of 3.3 or higher at Manipal qualify for admission to an M.S. program in WSU-CSE. Students with a GPA between 3.0 and 3.3 are required to take GRE and obtain a minimum total score of 298 to qualify for admission to a WSU-CSE M.S. program.

* MMS 601 and MMS 603 are equivalent of undergraduate core courses at WSU and are required for admission to a master’s program in CSE Dept.
WSU-CSE courses closest to Manipal University MS courses in EDA, ESD, ESI, EWT, MMS, and VIR programs.

<table>
<thead>
<tr>
<th>Manipal University Courses</th>
<th>Equivalent WSU Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>EDA 601 Data Structures and Algorithms</td>
<td>CS 5100 Data Structures and Algorithms</td>
</tr>
<tr>
<td>EDA 604 Advanced VLSI Design</td>
<td>CEG 7030 VLSI Design &amp; Optimization</td>
</tr>
<tr>
<td>EDA 608 Low Power VLSI Design</td>
<td>CEG 7020 Low Power VLSI System Design</td>
</tr>
<tr>
<td>ESD 608 Embedded Systems Design</td>
<td>CEG 7360 Embedded Systems</td>
</tr>
<tr>
<td>ESD 610 System Software</td>
<td>CEG 6110 Introduction to Software Engineering</td>
</tr>
<tr>
<td>ESI 603 System Software</td>
<td>CEG 6110 Introduction to Software Engineering</td>
</tr>
<tr>
<td>ESI 605 Embedded Systems Design</td>
<td>CEG 7360 Embedded Systems</td>
</tr>
<tr>
<td>EWT 601 Data Structures and Algorithms</td>
<td>CS 5100 Data Structures and Algorithms</td>
</tr>
<tr>
<td>EWT 603 Real-Time Operating Systems</td>
<td>CEG 6360 Distributed Computing Systems</td>
</tr>
<tr>
<td>EWT 607 Advanced Computer Networks</td>
<td>CEG 7450 Advanced Computer Networks</td>
</tr>
<tr>
<td>MMS 607 Software Engineering</td>
<td>CEG 6110 Introduction to Software Engineering</td>
</tr>
<tr>
<td>MMS 610 Advanced Image Processing</td>
<td>CEG 7590 Medical Image Analysis (1st half of)</td>
</tr>
<tr>
<td>MMS 612 Dot Net Technologies</td>
<td>CEG 6800 Web Information Systems</td>
</tr>
<tr>
<td>VIR 602 Advanced Operating Systems</td>
<td>CEG 7370 Distributed Computing</td>
</tr>
<tr>
<td>VIR 604 Multicore Program Optimization</td>
<td>CEG 7370 Distributed Computing</td>
</tr>
</tbody>
</table>
Manipal University courses for which there are no similar WSU-CSE courses:

EDA 602 Digital Signal processing
EDA 607: CAD for VLSI
EDA 606: Advanced Logic Synthesis
ESD 602 Digital Signal Processing
ESD 604 Device Drivers
ESI 602: Virtual Instrumentation
ESI 606: Embedded Java
EWT 608: Wireless Communication Standards
VIR 611: Virtualization