# Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>COMP5327</th>
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</thead>
<tbody>
<tr>
<td><strong>Subject Title</strong></td>
<td>Wireless Networking and Mobile Computing</td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
<td>3</td>
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<tr>
<td><strong>Level</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Pre-requisite / Co-requisite / Exclusion</strong></td>
<td>Nil (but some knowledge in internet infrastructure and protocols is preferable)</td>
</tr>
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</table>

## Objectives

After completing this subject, students will learn about:

- enabling technologies for wireless networking and mobile computing
- wireless networking standards
- mobile computing applications

## Intended Learning Outcomes

Upon completion of the subject, students will be able to:

### Professional/academic knowledge and skills

a. understand wireless networking technologies and their applications;
b. apply, design and/or evaluate related protocols and technologies;
c. understand the trends and development of wireless networking and mobile computing.

### Attributes for all-roundedness

d. participate in team work, presentation and technical writing.

## Subject Synopsis/Indicative Syllabus

- Cellular Networks – Frequency Reuse, Access Protocols, Location Management, Handoff Management, 2G/3G/4G Cellular Network Standards
- Wireless Local Area Networks – Overview of IEEE 802.11 Standard, Access Protocols, Mobility Management
- Personal Area Networks / Bluetooth – Overview of Bluetooth Standard, Piconet and Scatternet, Frequency Hopping, Baseband Protocol, Link Manager Protocol, Logical Link Control and Adaption Protocol
- Location-aware Computing – GPS, Indoor Positioning Techniques, Location-aware Applications
- Mobile Computing Applications – Mobile Apps, Case Studies
- Other Selected Topics (e.g., Mobile IP, RFID, Sensors)
Teaching/Learning Methodology

Teaching is mainly conducted through lectures.

Learning is supplemented by labs/tutorials, seminars and e-learning methods, where applicable.

Students are assessed through assignments, a project and an examination.

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Learning Outcomes</th>
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<tbody>
<tr>
<td>Specific assessment methods/tasks</td>
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<td></td>
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<tr>
<td>----------------------------------</td>
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<tr>
<td>1. Assignments</td>
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<tr>
<td>2. Project</td>
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<td>3. Examination</td>
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<tr>
<td>Total</td>
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</table>

The project is used to assess all learning outcomes (a) – (d).

The assignments are used as a continuous assessment method to assess learning outcomes (a) – (c) (e.g., students’ understanding of the technologies).

Finally, students are assessed by a formal examination, covering learning outcomes (a) – (c).

Student Study Effort Expected

Class contact:

- Class activities (lectures/tutorials/lab(s)) 39 Hrs.

Other student study effort:

- Self-study, assignments, project, exam 65 Hrs.

Total student study effort 104 Hrs.

Reading List and References

Books:


IEEE Press.


**Journals:**

IEEE Transactions on Mobile Computing
IEEE Pervasive Computing
IEEE Transactions on Wireless Communications
IEEE Journal on Selected Areas in Communications
ACM Wireless Networks
ACM Mobile Networks and Applications