

# NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

## Year 1 Programme

Title of Module: Kaleidoscope of IT technologies

Objectives of Module: Introduction of various IT Technologies including mobile and web applications development, social media and information security.

No. of Sessions Needed: 24 x 2.5 hours

Resources Needed:

### Software:

- Windows 7
- Adobe CS4
- Microsoft Visual Studio
- HTML/Text Editor

### Hardware:

- PCs with Internet access
- Netbooks with Internet access
- Mac with Internet access
- iPod Touch
- Wireless routers
- Fingerprint readers

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

Session	Topic*	Learning Outcome	Format (Lecture, Tutorial or Project Work)	No. of Hours
1	Digital Content for Social Media	Students will learn about generating interesting digital content for social media	Workshops and fun activities	15
2	Web Application Design and Development	Student will learn basic technologies in web development and web publishing	Workshops and fun activities	15
3	iPhone Widget Development	Students will learn how to create web applications that are styled for iPhone to provide the look-and-feel of a native application.	Workshops and fun activities	15
4	Information Security	Students will learn the various aspects of information security from personal to enterprise perspectives	Workshops and fun activities	15

Note:

\*Topic, Lesson activities may vary from what is stated, it may be adjusted depending on students' learning abilities.

# NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

## Year 2 PROGRAMME

Title of Module: Mobile Application Development

Objectives of Module: This module aims to equip students with the practical skillsets to develop applications to run on mobile devices such as iPhone or iPod Touch

No. of Sessions Needed: 24 x 2.5 hours

Resources Needed:

### Software:

- HTML/Text editor

### Hardware:

- Mac with Internet Access
- iPod Touch

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

Session	Topic*	Learning Outcome	Format (Lecture, Tutorial or Project Work)	No. of Hours
1	Basic Widget Development	Students will learn how to create widgets that are styled for mobile devices.	Lecture Practical	20
2	Advanced Techniques	Create an interactive mobile application with external web services using AJAX and gestures event handler	Lecture Practical	12.5
3	Animation and Visual Effects	Create interactive animations and use of visual effects to enhance the usability of mobile applications	Lecture Practical	10
4	Client side data storage	Use client side data storage to store persistent data for mobile applications	Lecture Practical	5
5	Project Development	Integrate the skills learnt to develop an innovative application for mobile devices such as iPhone and iPod Touch	Project Work	12.5

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# NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

## Year 2 PROGRAMME

Title of Module: Networking for Home and Small Business

Objectives of Module: Students will be taught to recognize the significant impact of networking on their lives and how to build and support a home or small business network with wireless equipment.

No. of Sessions Needed: 24 x 2.5 hours

Resources Needed:

Software:

Packet Tracer

Hardware:

PCs with Internet Access

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

Session	Topic*	Learning Outcome	Format (Lecture, Tutorial or Project Work)	No. of Hours
1	Personal Computer Hardware	<ul style="list-style-type: none"> <li>• Personal Computers and Applications</li> <li>• Types of Computers</li> <li>• Binary Representation of Data</li> <li>• Computer Components and Peripherals</li> <li>• Computer System Components</li> </ul>	Lecture Practical	2.5
2	Operating Systems	<ul style="list-style-type: none"> <li>• Choosing the Operating System</li> <li>• Installing the Operating System</li> <li>• Maintaining the Operating System</li> </ul>	Lecture Practical	5
3	Connecting to the network	<ul style="list-style-type: none"> <li>• Introduction to Networking</li> <li>• Principals of Communication</li> <li>• Communicating on a Local Wired Network</li> <li>• Building the Access Layer of an Ethernet Network</li> <li>• Building the Distribution Layer of a Network</li> <li>• Plan and Connect a Local Network</li> </ul>	Lecture Practical	10
4	Connecting to the Internet through an ISP	<ul style="list-style-type: none"> <li>• The Internet and How We Connect to It</li> <li>• Sending Information Across the Internet</li> <li>• Networking Devices in a NOC</li> <li>• Cables and Connectors</li> <li>• Working with Twisted-Pair Cabling</li> </ul>	Lecture Practical	10
5	Network Addressing	<ul style="list-style-type: none"> <li>• IP Addresses and Subnet Masks</li> <li>• Types of IP Addresses</li> <li>• How IP Addresses are Obtained</li> <li>• Address Management</li> </ul>	Lecture Practical	5

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

6	Network Services	<ul style="list-style-type: none"> <li>• Client/Servers and Their Interaction</li> <li>• Application Protocols and Services</li> <li>• Layered Model and Protocols</li> </ul>	Lecture Practical	5
7	Wireless Technologies	<ul style="list-style-type: none"> <li>• Wireless Technology</li> <li>• Wireless LANs</li> <li>• Security Considerations on a Wireless LAN</li> <li>• Configuring an Integrated AP and Wireless Client</li> </ul>	Lecture Practical	5
8	Basic Security	<ul style="list-style-type: none"> <li>• Networking Threats</li> <li>• Methods of Attack</li> <li>• Security Policy</li> <li>• Using Firewalls</li> </ul>	Lecture Practical	5
9	Troubleshooting your network	<ul style="list-style-type: none"> <li>• Troubleshooting Process</li> <li>• Troubleshooting Issues</li> <li>• Common Issues</li> <li>• Troubleshooting and the Help Desk</li> </ul>	Lecture Practical Project	12.5

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# NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

## Year 2 Programme

Title of Module: Social Media in Action

Objectives of Module: This module aims to introduce various IT tools to create contents for social media platforms. It provides collaborative hands-on activities in developing a new presence and allows students to express their creativity in the use of social media to publish their self-produced media contents through a project-based learning approach.

No. of Sessions Needed: 24 x 2.5 hours

Resources Needed:

### Software:

- Microsoft Office (With Powerpoint)
- Corel Video Studio Pro X3 (Or other video editing software)
- Web Browser - Internet Explorer (version 7 or later)
- HTML/Text Editor
- Adobe Photoshop

### Hardware:

- Desktop headsets/ Microphones
- Fire Wire and Fire Wire port, or USB
- Video Cameras
- PCs with Internet Access

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

Session	Topic*	Learning Outcome	Format (Lecture, Tutorial or Project Work)	No. of Hours
1	Introduction	To learn about Web 2.0 and Social Media	Lecture Research Presentation	2.5
2	Camera Orientation & Techniques	To understand filming techniques, formats and camera orientation	Lecture	2.5
3	Video Editing & Presentation	To use video tool to edit video footage	Practical	10
4	Media Copyright and Legal Issues	To understand copyright and legal issues pertaining to digital media	Lecture	2.5
5	Storyboarding & Filming	To understand the process of storyboarding and filming	Lecture Presentation Filming	10
6	Web Basics	To learn how to create HTML forms with CSS	Lecture Practical	12.5
7	Add-ons to Web Basics	To learn how to enhance web pages	Practical	5
8	Social Media Tools	To understand social media tools and their usages	Practical	5
9	Project	To integrate knowledge from earlier sessions into an interesting showcase of digital contents for social media	Practical Presentation	10

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# NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

## Year 2 Programme

Title of Module: Web Application Development

Objectives of Module: This module introduces the concepts of client and server based Web application development, including Web page design, mark-up languages, scripting languages, and server development technologies. The latest tools and techniques are taught, enabling the student to develop intelligent and dynamic web-based applications.

No. of Sessions Needed: 24 x 2.5 hours

Resources Needed:

### Software:

- Internet Explorer with Silverlight
- HTML/Text Editor
- Microsoft Visual Studio with Silverlight
- Expression Studio
- Photoshop
- Flash
- MSOffice 2010

### Hardware:

- PCs with Internet Access

## NANYANG POLYTECHNIC INFOCOMM CLUB PROGRAMME

Session	Topic*	Learning Outcome	Format (Lecture, Tutorial or Project Work)	No. of Hours
1	Overview of Internet and Web technologies	Understand the history, web technologies, and concepts of the Internet and World Wide Web	Lecture Discussion	2.5
2	Web Site Planning & Design	Understand the process of planning and to design an effective Web site	Lecture Practical	5
3	Development using HTML and CSS	To create web pages and forms using HTML and CSS.	Lecture Practical	15
4	Development using ASP.NET	To create web pages using ASP .NET and AJAX	Lecture Practical	15
5	Advanced Techniques	Incorporate SilverLight features and Flash Animations for interactivity and better user experience	Lecture Practical	10
6	Project Development	Incorporating the skills learnt to develop interesting websites to showcase students' creativity	Project	12.5

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