4.3.2   Description of courses

Master of Mass Communication

Core subjects

A6301 Communication, Technology & Society
This subject, which combines a survey of classic studies with discussion of current issues and areas of debate, examines communication, especially mass communication, within its social context. It introduces students to a broad range of issues concerning the role, effects and limitations of communication in modern society, including communication as a process within society, the content and effects of mass media, the media and public issues, media and information controls, the impact of new communication technologies, and communication for national development.

A6302 Applied Communication Research
This subject focuses on how to apply the results of research to the evaluation and enhancement of media operations and output, communication planning, and mobilisation of communication resources at the corporate and national levels. It covers research concepts such as sampling, significance, validity and reliability, and types of research relevant to media industries including content analysis, survey and designs for campaign evaluation. The aim is to enhance students' understanding of research findings, ability to read research reports critically and to translate findings into more effective media management and production.

A6303 Media Law, Ethics & Policy
The subject aims to familiarise students with the broad scope of regulations covering various aspects of the media. The course will cover international laws, conventions and treaties and Singapore law relating to the media. The course will also cover intellectual property law, defamation and censorship. The rest of the course will be devoted to ethics and policy. Students will be taught problem-solving skills for ethical issues. Current policy issues and the policy-making process wraps up the course. At the end of the course, students should have a better appreciation of the legal and ethical constraints in making management decisions.

Prescribed Electives

A6310 Critical Inquiry for Communication Professionals (compulsory subject for ProT students)
This subject is aimed at providing an opportunity for students to carry out a study, in the form of a project, on a selected topic in the area of mass communication. The student will choose this topic in consultation with the course instructor. This subject will be based on 100% continuous assessment (no final exam) and comprises two components:

(i)   Basic understanding of some commonly used statistical methods
(ii)   Data collection, data analysis and research report writing. This will be hands-on practice

A6311 Advanced Communication Research (compulsory subject for AcaT students)
This subject examines the concepts and procedures applied to audience research, such as survey and focus group methods. Students will also be trained on sampling, questionnaire construction, data collection, and data analysis through review of existing studies, as well as exercises and hands-on projects. Students will be introduced to relevant advanced statistical techniques and are expected to apply and extend their skills in individual and group research projects.

General electives

A6321 Media Management
The first part of the subject focuses on the structure and process of media organisations. It looks at the components of production, finance, programming, promotion and distribution, and human resources. The second part turns to issues concerning media as business, including multicultural management, fragmentation of the media, competition, and regionalisation.

A6322 Media & Marketing
The objective of this subject is to introduce measurement/ reporting methods for mass media audiences, to learn to apply tools for strategic marketing/media planning and to increase awareness about the conduct of business in global marketing environments. Through a series of case studies, students are exposed to

marketing and communications executives who conduct business regionally and across regions, and who represent many fields related to marketing communication, e.g. executives from multi-national and regional companies, broadcast media, production companies, print media, advertising firms and public relations firms.

A6323 Comparative Global Media System
Comparative analysis of media systems of selected countries with international distribution; Policy analysis of media operations at international and local levels. Globalisation as a technological, economic, and cultural phenomenon, and implications for media system planning.

A6324 Information Technology: Impact & Planning
Telecommunication processes, structures and networks in the emerging Information Society. Systematic study from a social science perspective of current and emerging communication and information technologies such as Internet. Attention to user needs and impact, tele-services design, and intelligent network system and development; including urban planning, health, services and distance education.

A6325 Public Communication Issues & Strategies
This subject focuses on government and corporate communications aimed at mass and specialized audiences. It examines issues relating to communication of government policies, corporate concerns and corporate image. Several communication models are used to analyse different strategies and tactics employed in public communication. The subject also explores possibilities of devising new communication paradigms using new technologies.

A6326 Campaign Design, Implementation & Evaluation
Public campaigns aimed at changing attitudes and behaviour or creating awareness are the focus of this subject. It examines the different stages of designing and implementing campaigns. It also introduces students to different evaluation methodologies and to research approaches to campaign development. Case studies of government and corporate campaigns are used to analyse the theory and practice of public campaigns.

A6327 Economics of the Media
This subject covers both micro and macroeconomic models, looking at economic forces that affect the media such as scarcity, competition, barriers to entry, fiscal policies, monetary policies, and issues pertaining to productivity, recession, inflation and protectionism. Also covered are structures and issues specific to the media such as concentration of ownership, privatisation, monopoly and state enterprises. The big players are studied in term of global monopolies and the economic forces underlying their strategic decisions. Special attention is paid to Asia and developing countries.

A6328 Critical Perspectives in Communication Studies
Critical and cultural approaches to media and culture in their social, economic, and political arenas. Topics include semiotics, discourse and narrative analysis, ideology and media, and related issues in critical and cultural analysis. Also covered are a range of issues in international and intercultural communication including communication and development, the new world information order, cultural imperialism, and globalisation. Specific examples focus on the interrelation between national and cultural agenda worldwide and in Singapore and the region.

A6329 Regional Communication Issues
This subject emphasises on the influence of the mass media on Asian societies. The historical, political, social and cultural dimensions in the development of mass communications in Asia, involving the structure and function of the media, will be main areas of focus. Some major topics of interest include ethics, legal limitations, freedom, copyright, censorship and cultural values.

A6330 Public Opinion & Persuasion
This subject focuses on psychological and social-psychological study of opinion and attitude change through media and public campaigns. Experimental and survey designs for measuring and monitoring public opinion, and classic case studies are reviewed. Applications to elections, marketing, and development campaigns are considered at the individual, group and societal levels.

A6331 Message Design & Production
This is a study of the writing styles and formats used in the mass media. In addition to examining critical and analytical skills in the print and electronic media, the emphasis will be on process: how to analyse each task,

how to apply the principles discussed and why and how to visualise messages and stories. Students will be given the opportunity to write and produce short messages with a strong visual component.

A6332 Multi-Media Systems
This is a subject on conceptualising and planning multi-media and interactive environments for the communication industry. Combining visuals with audio and text for message presentation, distribution and interaction within various current and emerging media distribution channels. Computer based multi-media authoring tools and design of multi-media services in electronic network environments.

A6334 Seminar in Research
Focuses on the procedural issues in research methodology and design. Topics include content analysis, case studies, focus group interview, survey, and an introduction to experimental research.

A6335 Special Topic in Mass Communication II
In-depth coverage of specific areas of communication theory research & practices, including communication policy & planning and media regulation & policy development.

A6337 Strategic Advertising Management
Practical concerns and scope of advertising management and relevant theoretical perspectives and principles. Some of the topics include media planning, decision-making, message strategy, branding, creative approaches, account-servicing, and agency-client relationships.

A6338 Communication Management & Leadership
Seminar covers issues such as effective leadership, value-added management performance, managerial creativity, innovation, organisational knowledge creation and usage, as well as corporate productivity of info-communication and media organisations.

A6339 Strategic Public Relations Management
World views that drive various communication and public relations management strategies, audience segmentation strategies and techniques, different models of public relations available to corporate public relations managers. Value-creative means of building and strengthening cogent relationships with various external entities.

A6901 Special Topic: International Public Relations
This course seeks to provide you with some insights on the generic principles that one can use to understand public relations practice in different nations. We shall also explore various environmental factors that affect public relations practice in different nations. The course also seeks to encourage critical thinking that will promote pedagogical discussions to advance scholarship in this area. Note that this course is not a "hands-on" course designed to teach you specific public relations techniques that you can use when you find the need to practice public relations in a given country. On the contrary, it seeks to introduce you to factors in an organisation's environment in different countries that affect public relations activities there. The idea is that such knowledge should help you in conducting public relations in specific countries.

A6902 Special Topic: Organisation Communication And Conflict Management
An in-depth coverage of specific areas of communication theory research & practices, including organisational communication and conflict management. Overarching theories of how humans interact within the organisation will be discussed and students will be asked to use these theories to analyse organisations and the conflicts that take place within them. We will also focus on developing practical skills to enhance students' ability to effectively communicate and resolve conflicts within the organisational context.

A6903 Special Topic: Media & Conflict
This course focuses on challenges related to media coverage of new emergencies-ethno-religious conflicts and terrorism. The focus would be on both international and local media. While internal media intensifies the process of elaborating and allocating characteristics to groups of people defined as enemy in multi-ethnic populations, international media broadcast stories of war and social fragmentation from faraway places to attract audiences to sell to audiences. The latter typically reacts in two ways: either it oversimplifies a conflict or succumbs to exaggeration. We would also look Islamic militancy, among other issues. The course has a significant history component as well. Understanding the structure and role of media in volatile places such as South Asia, Middle East, former Yugoslavia and elsewhere is vital to the understanding of the link between media and conflict. This course will enable students to acquire a deeper understanding of the dynamics of conflict and how media complicates or eases the situation.

A6904 Special Topic: Convergent New Media: Challenges & Opportunities
The emerging trends of new media technologies ranging from electronic mass media, computers and Internet, consumer electronics, telephony and satellite technologies will be explored. The political, economic, social, philosophical and legal issues involved in the evolution, diffusion and use of new and convergent communication technologies will be examined. The need to apply convergent media technologies in the contexts of media management and marketing will be discussed.

Master of Science in Information Studies

Core subjects

H6602 Information Sources & Searching
Primary, secondary, and tertiary information sources, in print and electronic formats. Dictionaries, thesauri, and books of quotation. General and subject encyclopaedias. Biographical sources. Geographical information sources: maps, atlases, globes, satellite images. General reference works. Information access: bibliographies, catalogues, indexing and abstracting services. Online information: OPACs, CD-ROM, online databases and WWW resources. The Invisible Web. Searching: search strategies, query formulation and refinement.

H6603 Information Storage & Retrieval
Basic concepts of information storage and retrieval systems. Design and structure of textual and bibliographic databases. Information organisation: classification, cataloguing, and data encoding. Basics information retrieval models. Automatic indexing and file organisation techniques. Subject approach to information and controlled vocabulary tools. Image, hypertext and multimedia information retrieval. Evaluation of information retrieval systems. Trends in information storage and retrieval techniques.

H6604 Professional Seminar
A series of seminars designed to provide an overview of the areas relating to the field of information studies. The seminars cover three main themes: professional practice, technological trends, and innovative industry applications. Speakers are drawn from industry and professional organisations.

Electives (Group A)

H6611 Human-Computer Interaction
Introduction to HCI. User interfaces: design requirements and guidelines. Human issues: cognitive and psychological issues of interaction design, mental models and interaction styles. Creative design techniques: task and user requirements analysis, scenario-based design and claims analysis. Usability evaluation techniques: usability inspection methods, analytic techniques and experimental techniques. New design guidelines from the cultural, ethical and legal perspectives.

H6612 Information Management
Information management in learning organisations. Learning modes and the organisational learning cycle. Information needs and information seeking in organisations. Information management activities. Managing human, textual and online information resources. Information systems in organisations. Information sharing in organisations. Marketing of information products and services to organisation's staff and stakeholders. Outsourcing of information management activities. Information auditing and management of information related projects.

H6613 Information Organisation
Organisation of information in different information settings. Principles of describing documents. Functions and purpose of catalogues, indexes and other access services. Tools and standards for preparing bibliographic records. Processes for determining access points and authority control. Subject analysis. Using classification schemes and subject headings. Cataloguing support systems. Peculiarities of organising information in the network environment.

H6692 Introduction to Archival Informatics
This course covers the theory and practice of archiving multimedia, hypertext, and hypermedia content, and their applications. General concepts of digital curation, including selection, description, preservation and access to the archives collection. History of multimedia development and multimedia basics: text, still images, animation, sound, video, and virtual worlds. Methodology and technology of archiving multimedia,

hypertext and hypermedia content. The student will acquire the competencies to develop a multimedia archives project and manage archives programmes in organisations.

Electives (Group B)

H6614 Internet & Web Technologies
Basic networking concepts including local area networks, wide area networks, routing and hardware. Internet communication protocols such as TCP/IP, FTP, SMTP and HTTP. Client-side technologies for Web pages: HTML, JavaScript, cascading style sheets and dynamic HTML. Basic Web page design: page layout, use of graphics, colour, typography and usability. Server-side technologies: Web servers, CGI, databases and XML.

H6615 Archives & Records Management
Archives: conservation principles, methods, techniques and technologies. Arrangement, standards and management. Non-textual materials: maps, drawings, photographs and AV resources. Records management: procedures, manuals, staffing, planning and scheduling. Records retrieval: file pattern, indexing systems, procedures and equipment. Records protection and disposition: inventory and analysis, scheduling, archival management and security. Record management technologies.

H6631 Collection Development & Management
Key concepts related to collection development and management. Community analysis and user liaison for information needs assessment. Policy formulation. Tools for the selection of materials. Procurement of and access to specialised information materials. Access and management of electronic information resources. Policy formulation and planning for collection development. Financial planning for collection development. Evaluation of collections. Materials deselection and weeding.

H6632 Cataloguing & Classification
Theories of cataloguing and classification. Development and use of bibliographic tools. Application of a variety of classification systems and control vocabulary tools. Developing and maintaining computerised bibliographic databases. Cataloguing of digital resources and metadata standards. Evaluation of bibliographic tools. Management of cataloguing operations in libraries and information centres.

H6633 Client-Centred Information Services
Information needs assessment of client populations. Service provision planning and implementation. Information products and services in the digital environment. Design and delivery of value-added services. Information packaging and proactive delivery of products and services. Evaluation methods and techniques for information services assessment. Strategies for effective information services marketing.

H6634 Business Information Sources & Services
The demand for business information. Organisation of business information. Company information, prospectuses, annual returns, annual reports, and company directories. Market research and market intelligence. Regulation and legislation. Intellectual property. Country information. Business intelligence and information gathering techniques. Census. Statistical information. Financial information. Standards. Public registers. Online databases. Business information services.

H6635 Management of Information Organisations
Principles of management and their application in information institutions. Managerial roles of information professionals. Managing people, processes, resources, technologies, and services in information organisations. Organisational structures and organisational behaviour dimensions. Strategic and operational planning. Human resource management. Communicating and directing. Fiscal management. Measurement and evaluation.

H6637 Digital Libraries & Information Portals
Basic concepts and evolution of digital libraries and information portals. Design, content and technical infrastructure. Information organisation and metadata. Information retrieval, information seeking behaviour and user interface issues. User requirements with regard to access control, management and evaluation. Technologies for building digital libraries and information portals. Management of digital information resources including preservation, copyright and security issues.

H6638 Evaluation of Library & Information Services

Role of performance measurement and evaluation in libraries and information centres. Performance measures, assessment methods and techniques. Criteria for evaluating information activities. Approaches to the evaluation of information resources and services. Use of evaluation data for decision making and planning. Special considerations for performance measurement in digital libraries.

H6651 Instructional Role of School Media Specialists
Role of school media specialists in fostering resource based learning. Integration of MRL (Media Resource Library) resources with the school curriculum. Developing alliances with teachers, students, parents, and other community members. Production of materials for supporting classroom instruction. Use of the Web and other media for classroom teaching and student projects. Developing reading habits and skills. User education for MRL resources, services and facilities.

H6652 Information Sources & Services for Children & Young Adults
Introduction to literature and information services for children and young adults. Identification of reading needs and interests for developing resources and services. Familiarity with the body of literature, both print and electronic, for children and young adults. Collection development: selection tools, resource utilisation, censorship and evaluation. Strategies for planning, implementation and evaluation of programmes and services for children and young adults.

H6662 Digital Preservation
Problems, issues, and decision-making for the preservation of digital information including electronic records and multimedia documents. Creation and maintenance of digital libraries and information on the Web. Digitisation of materials for preservation. Creation of electronic surrogates for records and artefacts. Strategies and techniques for digital preservation. Policy and legal issues.

H6663 Archiving of Multimedia Information
Development of multimedia information archives. Methods of deposit and collection of multimedia archives: national policies, administrative problems, centralisation versus decentralisation. Relationship between the production archive and the deposit archive. Conversion and medium management. Legal issues, policies and standards. Indexing and access control. Conservation and maintenance of multimedia information. Media assets management.

H6671 Database Management Systems
Overview of database models including hierarchical, network, distributed, object-oriented and XML database models. Data modelling using the entity-relationship diagram. Relational database model. Database design. Database operations: relational operations, SQL, QBE. Web access to databases: ODBC, CGI and ISAPI, application scripting. Data warehousing and OLAP. Database administration. Transaction processing and concurrency control.

H6672 Web-Based Information Systems
This course covers the technologies, design and development of web-based information systems and web services, design of enterprise systems using service-oriented architecture, and XML and semantic web technologies. Topics include: Server-side scripting for web interactivity using C# and ASP.NET; Client-side scripting using AJAX technology; Web services and service-oriented system architecture, and supporting specifications, including SOAP, WSDL, UDDI, WS-Coordination, WS-Atomic Transaction, WS-BPEL; XML and related specifications, including XML Schema, XSLT, RDF/XML, RDFS and OWL; Semantic web and enabling technologies such as ontology and metadata schema.

H6673 Multimedia Information Systems
Introduction to multimedia, hypertext, hypermedia and their applications. Multimedia basics: text, graphics, animation, audio, video and file formats. Multimedia products and applications. Selection and evaluation of multimedia hardware, software and authoring tools. Design of graphics and multimedia content. Development of multimedia information systems. Multimedia and CD publishing. Copyright in multimedia.

H6675 Systems Analysis & Design
Information system design environment. Overview of typical information systems. The life-cycle development process. Problem and concept formation. Requirements analysis and systems specification. Structured Systems Analysis and Design Methodology (SSADM) and Object-Oriented Methodology (OOM). Structured systems modelling and analysis tools. Fundamentals of object-oriented analysis. System design: structured design and object-oriented design. Software testing. Productivity tools for system development. Successful IT project management.

H6676 Computer Programming for Information Professionals
Programming fundamentals, basic data types, arrays, control structures, input and output. Object-oriented programming: classes, methods, inheritance and polymorphism. File and database access, exception handling, data structures and network programming. Program development: code design, style, standards and techniques. Basic algorithms for information storage and retrieval: searching, sorting, stemming, indexing, classification and abstracting.

H6677 Information Mining & Analysis
Principles and concepts of information and data mining. The knowledge discovery process. Data preparation. Supervised and unsupervised learning. Multivariate statistical analysis. Machine learning: decision tree induction, rule induction, nearest neighbour categorisation, cluster analysis, Bayesian learning and neural networks. Time series analysis. Information mining software and tools. Applications of information mining.

H6690 Special Topic: Information Security & Digital Forensics
Data integrity, privacy, and security from legal issues, social and ethical concerns, and standards perspectives. The government impact on laws and public policy; defense and business risk. The Internet & surveillance and terrorism: cyberattacks, cybercrime, and cyberterrorism. Information security tools and methods: cryptography, public-key infrastructure, security protocols, firewall, intrusion detection system, anti-hacking tools, and security protection in operating systems.

H6691 Special Topic: Mobile Applications Development
Wireless networking: cellular wireless networks, mobile IP, IEEE 802.11 Wireless LAN and Bluetooth; Mobile applications architectures; Mobile device applications development with Java 2 Platform Micro Edition (J2ME): Mobile Information Device Profile (MIDP) and Connected Limited Device Configuration (CLDC); User interface programming; Persistent storage and databases; network programming and wireless messaging; Mobile applications: Mobile commerce, mobile gaming, location-based services; Security issues.

H6696 Special Topic: Music Libraries
This course introduces the field of music librarianship. Topics include the nature of musical knowing, the literature of music, the types of music libraries, collection development and acquisition, principles and techniques of music cataloguing and classification, technology in music libraries and music digital libraries, promotion of music libraries, music publishing and recording, intellectual property issues, music literacy, and the functions of the music librarian. In addition to readings, students are expected to spend time listening to assigned audio files and watching assigned movies.

H6697 Special Topic: Information Entrepreneurship
Information entrepreneurship is an area of entrepreneurship that focuses on the development of innovative ideas in the information and technology sector. The course is designed to help students gain an appreciation of the challenges, risks and rewards of entrepreneurship, and understand the transformation that one needs to undergo when moving from an executive/managerial career into the entrepreneurial lifestyle. Topics include: Entrepreneurship theory, and the entrepreneurial process; Developing successful business ideas, identifying markets and sources of revenue, industry and competitor analysis, and understanding the value chain; Developing an effective business model, creating a venture team, and marketing, sales and financial plans; Developing an efficient operations model, getting financing and funding, and strategies for growth; Managing partners and investors, staff and suppliers, and customers.

H6698 Special Topic: Science & Technology Libraries
Information sources and services in physics, chemistry, biology, mathematics and engineering, and their evaluation and use. Formal and informal channels of scientific communication; Emerging methods of publishing scientific information. The communication patterns, information needs and information seeking behaviour of scientists and engineers. Measurement and mapping of science and technology. The role of the library in promoting science literacy.

H6699 Critical Inquiry in Information Studies
This course provides students with an overview of how to design and conduct a simple research study (project) for practical application on a selected topic in the areas of information services and systems. It covers study design, preparation of proposals and manuscripts, intellectual property and ethics. Students are introduced to the main types of research methods, with a more in-depth examination of a few useful methods, to address information service/system problems.

Master of Science in Information Systems

Foundation courses

CI6201 Professional Seminar
A series of seminars will be conducted to provide an overview of the areas related to the field of information systems (IS). Speakers will be drawn from academia, industry and professional organisations. Methods and approaches to research and development suitable in the area of IS will be covered and case studies of implementation of IS from industry and academia will be shared.

CI6202 Information Architecture and Design
Information architecture as an approach for information systems design. Issues related to user interface design, users, usability and evaluation. Collection, organisation, presentation and navigation of information. Information organisation: metadata, controlled vocabularies, classification schemes, taxonomies and ontologies. Application of information architecture and design techniques to the Web.

CI6203 Software Engineering
Overview of the software development life cycle; Software process models; Traditional software engineering methods. Requirements analysis and systems specification; Fundamentals of object-oriented programming: encapsulation, inheritance, polymorphism. Object-oriented analysis and design concepts and techniques including use of the Unified Modeling Language (UML); Design patterns and object-oriented frameworks; Software testing.

CI6204 Software Project Management
Introduction to software project management; Project management concepts; Project integration management; Core project management areas: scope, time, cost, quality; Project team: roles, responsibility and authority; Project communication and documentation; Risk Management; Best Practices; Case studies in project management.

CI6205 Database Systems
Overview of database models: relational database models; Relational database design: data modelling using the Entity-Relationship diagram and normalisation of relational tables; Relational database definition and manipulation: SQL; Semi-structured data representation with XML; Querying XML data with XQuery and XPath; Managing database environments: database administration, transaction processing, concurrency control, client-server processing, and security.

CI6206 Internet Programming
Basic networking concepts; Internet communication protocols such as TCP/IP, HTTP, FTP, RTP; Socket programming; Advanced Web page development with JavaScript, CSS and AJAX; Server-side development technologies such as JSP and Java servlets; Web development framework such as Struts and JSF; Security issues including threat identification, security strategies, encryption and authentication.

CI6207 Human Computer Interaction - Users, Tasks and Designs
Introduction to general design and usability issues; Psychology of design of everyday things; Key cognitive and physical human capabilities and their relations to design of usable and useful systems; Users: personas, human factors and human diversity; Tasks: goals, scenarios; Design: general established design heuristics and guidelines; International design heuristics and guidelines from three perspectives: cultural, ethical and legal; Relate design and usability methods to the wider systems development process.

Elective courses

CI6220 Usability Engineering
Introduction to a range of user-centred tools, methods and techniques for building usable and useful interactive systems complementing other software development approaches; Creative design aids: requirements analysis, scenario-based design, claims analysis, statecharts; Usability evaluation aids: usability inspection methods - heuristic evaluation, cognitive walkthrough; analytic evaluation methods - GOMS and keystroke level analysis; experimental evaluation methods: qualitative and quantitative methods.

CI6221 Information Visualisation
Study of concepts, models and examples for improved information visualisation; Rearrangement and interaction: affordances, table lens, mosaic displays, network data, algorithms; Representation and

interpretation data: quantitative, ordinal and categorical data; Dynamic exploration: dynamic queries, attribute explorer, neighbourhood explorer, model maker; Connectivity: graph theory, general networks, tree structures; Document visualisation: TileBars, galaxies, themescapes, galaxy of news, Kohonen maps.

CI6222 Mobile and Ubiquitous Applications
Data communications and networking concept; Wireless networking: wireless cellular networks, mobile IP, IEEE 802.11 Wireless LAN and Bluetooth; Mobile device applications development: J2ME, mobile information device profile (MIDP) and connected limited device configuration (CLDC); Wireless network programming and messaging; WAP, WML and WMLScript; Location-based wireless applications: GPS and network-based positioning techniques.

CI6223 Interactive Media Development
Multimedia, hypertext, hypermedia and their applications; Multimedia basics: text, graphics, animation, audio, video and file formats; Compression techniques in images, audio and video content; Multimedia standards; Multimedia development tools, technologies and languages; Development for standalone and Web-based multimedia information systems; Media rights management; Distributed multimedia; Technologies and techniques for multimedia content management.

CI6224 Software Testing and Performance Analysis
Software test process and principles: planning, specification, execution, checking, recording and completion; Test techniques: functional, structural and non-functional testing techniques, static and dynamic analysis, non-systematic testing techniques, user-acceptance test; Software Reviews; Computer-aided software testing tools; Test management; Risk management; Disaster recovery; Best practices; Case studies in software performance analysis and evaluation.

CI6225 Enterprise Applications Development
Design and implementation of enterprise application systems; XML processing with XSL, Document Object Model, related APIs and technologies; Enterprise component technologies such as EJB, CORBA and Microsoft .NET; Web services: architecture, protocols, tools and languages; Web server administration: installation, maintenance, performance tuning, and log analysis; Examples of enterprise application systems: information and knowledge portals and digital libraries.

CI6226 Information Retrieval and Analysis
Representation, storage, and access to very large digital document collections: issues, data structures and algorithms. Information retrieval models including Boolean, vector space and probabilistic models. Indexing and retrieval techniques. Evaluation of information retrieval systems. Text and Web mining: content, structure and usage mining. Web search: search engines, spiders, link analysis, agents. Recommender systems and intelligent information retrieval. Information extraction and integration.

CI6227 Data Mining
The knowledge discovery process. Data preparation including data cleaning, outlier analysis and transformation. Statistical techniques: regression modeling, multivariate statistics, statistical inference. Supervised and unsupervised learning techniques including decision tree induction, nearest neighbour categorisation, cluster analysis, association analysis, support vector machines, Bayesian learning and neural networks. Data mining software and tools. Applications of data mining to complex data types.

CI6228 Managing Information Systems
Fundamental IS concepts from an organisational and managerial perspective; Organisational impacts of IS; Business value of different types of IS; Technological component of IS; Building and managing IS; Management of Global IS; Integrating emerging information technologies; IS investments; Ethics and Social Issues; Best practices and case studies in management of IS.

CI6229 Management of Information Systems Outsourcing
Overview of management of IS outsourcing: planning and management of IS outsourcing, sourcing strategies, sourcing models, supplier selection, legal issues related to IS sourcing, relationship management in IS outsourcing and managing global IS outsourcing; Risk mitigation practices: cultural, legal, political, infrastructure, logistical and human resources issues; Best practices and case studies of IS outsourcing.

CI6230 Information Systems Security
Basic security concepts: confidentiality, integrity, and availability; Protection methods: access control, flow control, and usage control; Algorithms and protocols: encryption, decryption, digital signatures,

authentication technologies, security protocols; Network security: TCP/IP, firewalls, intrusion detection system; Secure operating systems and applications; Anti-hacking security tools.

CI6231 Security Policy and Strategy

Contrast survivability and information security; Challenge of survivability; Strategies for analyzing and managing risk; Critical assets and their corresponding risks; Best practices for enhancing organisational survivability; Methods of security information assets; Failures and availability management solutions; Policy formulation and implementation; Best practices of configuration management and control; Responsibilities of IT managers and technical people.

CI6232 Intrusion Detection

Methods of attacking and defending a network. Design of secure information infrastructure: servers, networks, firewalls, workstations, and intrusion detection systems. Intrusion detection and network monitoring techniques. Worms, viruses and other malware: operation, detection and response. Principles of penetration testing for assessment of system security. Hacker exploits, tools and countermeasures. Cybercrime: concepts and principles. Investigative techniques. Ethical, legal and privacy issues.

CI6291-4 Special Topic 1-4

Courses in special areas of the Information Systems field not covered in the above list may be offered occasionally according to the special interests of staff members and visiting staff.

CI6299 Critical Inquiry in Information Systems

Overview of how to design and conduct research projects in the area of information systems. Research study design, preparation of proposals and manuscripts, intellectual property and ethics. Introduction to the main types of research methods, with a more in-depth examination of a few useful methods, to address information systems problems.

Dissertation

Harnessing the knowledge, skills and attitudes acquired in the programme and applying them to solve information systems-related research problems, create new knowledge or develop new information system products or services is an essential part of the programme. In this respect, each student is mentored by a staff member in an in information systems research project leading to a dissertation of up to 15,000 words. The project can be in any information systems area.

Master of Science in Knowledge Management

Core subjects

K6201 Foundations of Knowledge Management

Data, information, knowledge, intelligence, and wisdom continuum. Forms and sources of knowledge. Knowledge market: the players, dynamics, and pathologies. Theories and principles of knowledge management. Perspectives of knowledge management. Steps in the knowledge management process. Organisational enablers for sharing and managing knowledge: management, information and technology.

K6202 Knowledge Management Applications and Practices

Approaches to implementing knowledge management. Application examples with focus on people-process-technology issues: enterprise knowledge portals, communities of practice, after action reviews, benchmarking and best practices, organisational learning, and incentive programmes. Success stories and lessons learnt from industry. Roles, responsibilities and competencies of KM professionals.

K6203 Professional Seminar

A series of seminars will be conducted to provide an overview of the areas related to the field of knowledge management. Speakers will be drawn from academia, industry and professional organisations. Method and approaches to research and development, suitable in the field of knowledge management, will be covered and case studies of implementation of knowledge management will be shared.

Electives - Group 'A'

K6211 Information and Knowledge Assets

Internal and external knowledge sources important for organisational effectiveness. Knowledge assets in organisations. Using the I-Space model to map organisational knowledge assets. Social learning cycle.

Understanding the knowledge worker: Schumpeterian and Newtonian learning, Career Anchors, Gardner's Theory of Multiple Intelligences, Sternberg's Balance Theory of Wisdom. Social network analysis: Measures of centrality, Measures of cohesion.

K6212 Knowledge Management Strategies

Defining and developing knowledge strategies. Determining the value of knowledge and innovation. Organisational knowledge creation strategies. Managing knowledge flows in alliances, subsidiaries, M&A and outsourcing contexts. Effective management of knowledge assets – creating a knowledge index or expertise locator, conducting a knowledge audit, good practices repositories. Knowledge fusion strategies. Issues and challenges for knowledge economies and enterprises. Micro and macro KM case studies.

K6213 Knowledge Management Technologies

Frameworks for study of KM tools. Assessing organisational and technological readiness. Developing a KM infrastructure and architecture. Selection and evaluation of KM tools including content management, business intelligence, search engines, intelligent agents, mind mapping and idea processors, taxonomy builders, enterprise knowledge portals, collaboration and learning systems. Trends and future directions of KM technologies.

Electives - Group 'B'

K6221 Business Intelligence

Business intelligence in the corporate environment: application, systems and processes. Characteristics of competitor, competitive and social intelligence. Business intelligence and growth opportunities: political, economic and social environments. Business intelligence strategies and systems. Business intelligence in various contexts: product, customer and supplier. Internet and Web-based intelligence. Ethical issues related to business intelligence.

K6222 Human Capital Management

Characteristics of the knowledge-intensive, people-rich organisation in a knowledge-based economy. Roles and dynamics of organisational culture. Organisational strategy and human capital management. Human capital needs and requirements planning. Recruitment and selection. Compensation management and performance measurements. Rewards, incentives and motivation. Measuring human capital goals. People and capability development. Global issues in human capital management.

K6223 Intellectual Capital

Fundamentals of intellectual capital. Intellectual capital measurement framework. Major knowledge assets valuation approaches: income, market and cost. Intellectual capital measurement models including Skandia's IC navigator and Intangible Asset Monitor. Parameters for managing intellectual capital. Managing knowledge workers and intellectual capital in organisations. Intellectual property protection and exploitation. Disclosure and corporate governance.

K6224 Internet Technologies & Applications

Use of Internet-based applications for KM: Weblogs, wikis, unified messaging, content management systems, portals. Web-based architectures: design, security and management. Internet standards and E-business components: XML, SOAP, WSDL, UDDI. Web application development techniques: client and server-side programming. Web design and usability.

K6225 Knowledge Discovery & Data Mining

Principles and concepts of knowledge discovery and data mining. The knowledge discovery process. Data preparation. Techniques and methods for extracting information and knowledge from large amounts of data. Statistical methods. Machine learning techniques: decision tree induction, nearest neighbour categorization, Bayesian learning, neural networks, association rules, and clustering. Text and Web mining for unstructured data. Data mining for KM applications.

K6226 Knowledge Management Measurement

Role of performance measurement in KM. KM performance measures: financial, customer, internal processes, innovation and growth. Measurement frameworks: Balance Scorecard, Intangible Assets Monitor, Business Excellence Model. Development and deployment of KM measures. Key indicators and practices of successful KM organisations: Skandia's Business Navigator, IC index, American Productivity and Quality Center (APQC) guidelines.

K6227 Knowledge Management Processes in Organisations
Fundamentals of KM processes: knowledge creation, transfer and reuse. Personal psychological disposition towards knowledge-sharing. Integrated perspective of individual motivation. Capturing tacit knowledge. Team composition and knowledge creation. Barriers to intra-firm knowledge transfer. Using game theory to model KM processes. Managing conflicts and negotiation. Influence of power and politics on KM processes.

K6228 Knowledge Organisation
Knowledge organisation systems, services, and structures. Intellectual foundations in knowledge structures. Features and procedures used in knowledge organisation schemes: classification and categorisation systems, thesauri, taxonomies, and ontologies. Using knowledge organisation tools for content organisation and management: websites, intranets, portals, document management systems, and other web-based services.

K6229 Knowledge Policies in Organisations
Knowledge Fusion and Mobilisation framework for developing knowledge policies. Issues and challenges of knowledge policies: intellectual property, privacy, security and trans-border flows. Impacts of knowledge policies: sociological, cultural, economic, legislative. Perspectives of knowledge policies in national, regional and international context. Roles of government, private sector, civil society in developing and legislating knowledge policies.

K6230 Knowledge Repositories
Survey of knowledge repositories: intranets, document management systems, content management systems, data warehousing. Design and development of repositories: identification, selection, acquisition, processing, search and retrieval. Issues of repository management: access control, versioning, retention policies. Leveraging repositories for knowledge sharing and reuse.

K6231 Knowledge Sources and Retrieval
Organisational information needs assessment. Information search process: concept identification, query formulation, retrieval and evaluation. Advanced search techniques: use of nested Boolean and other operators, thesaurus descriptors, and query refinement. Identifying and searching knowledge sources: company information, prospectus, annual reports, company directories, intellectual property, market intelligence reports, and government documents.

K6232 Managing Knowledge Management Projects
Genre of KM projects. Primer on KM project management. Project management cycle. Championing and leading KM projects. Dynamics of KM project teams. KM project scheduling and resource management techniques. KM project implementation and issues. Cost and quality management. KM project communication and measurement. Critical success factors for KM projects. Exemplars of KM projects.

K6299 Critical Inquiry in Knowledge Management
Role of critical thinking, evaluation and research in information and knowledge work; steps in carrying out a research project: problem identification, theoretical framework, methodological design, data collection and analysis; developing a research proposal; communicating research results; assessment and use of results of research studies; critique and review of research studies; ethical concerns and issues associated with research.

Graduate Diploma in Mass Communication

Core subjects

A6301 Communication,Technology & Society
This subject, which combines a survey of classic studies with discussion of current issues and areas of debate, examines communication, especially mass communication, within its social context. It introduces students to a broad range of issues concerning the role, effects and limitations of communication in modern society, including communication as a process within society, the content and effects of mass media, the media and public issues, media and information controls, the impact of new communication technologies, and communication for national development.

A6302 Applied Communication Research
This subject focuses on how to apply the results of research to the evaluation and enhancement of media operations and output, communication planning, and mobilisation of communication resources at the

corporate and national levels. It covers research concepts such as sampling, significance, validity and reliability, and types of research relevant to media industries including content analysis, survey and designs for campaign evaluation. The aim is to enhance students' understanding of research findings, ability to read research reports critically and to translate findings into more effective media management and production.

Prescribed elective

A6325 Public Communication Issues & Strategies
This subject focuses on government and corporate communications aimed at mass and specialised audiences. It examines issues relating to communication of government policies, corporate concerns and corporate image. Several communication models are used to analyse different strategies and tactics employed in public communication. The subject also explores possibilities of devising new communication paradigms using new technologies.

A6326 Campaign Design, Implementation & Evaluation
Public campaigns aimed at changing attitudes and behaviour or creating awareness are the focus of this subject. It examines the different stages of designing and implementing campaigns. It also introduces students to different evaluation methodologies and to research approaches to campaign development. Case studies of government and corporate campaigns are used to analyse the theory and practice of public campaigns.

A6330 Public Opinion & Persuasion
This subject focuses on psychological and social-psychological study of opinion and attitude change through media and public campaigns. Experimental and survey designs for measuring and monitoring public opinion, and classic case studies are reviewed. Applications to elections, marketing, and development campaigns are considered at the individual, group and societal levels.

General electives

A6321 Media Management
The first part of the subject focuses on the structure and process of media organisations. It looks at the components of production, finance, programming, promotion and distribution, and human resources. The second part turns to issues concerning media as business, including multicultural management, fragmentation of the media, competition, and regionalisation.

A6322 Media & Marketing
The objective of this subject is to introduce measurement/ reporting methods for mass media audiences, to learn to apply tools for strategic marketing/media planning and to increase awareness about the conduct of business in global marketing environments. Through a series of case studies, students are exposed to marketing and communications executives who conduct business regionally and across regions, and who represent many fields related to marketing communication, e.g. executives from multi-national and regional companies, broadcast media, production companies, print media, advertising firms and public relations firms.

A6323 Comparative Global Media System
Comparative analysis of media systems of selected countries with international distribution; Policy analysis of media operations at international and local levels. Globalisation as a technological, economic, and cultural phenomenon, and implications for media system planning.

A6324 Information Technology: Impact & Planning
Telecommunication processes, structures and networks in the emerging Information Society. Systematic study from a social science perspective of current and emerging communication and information technologies such as Internet. Attention to user needs and impact, tele-services design, and intelligent network system and development; including urban planning, health, services and distance education.

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A6327 Economics of the Media
This subject covers both micro and macroeconomic models, looking at economic forces that affect the media such as scarcity, competition, barriers to entry, fiscal policies, monetary policies, and issues pertaining to productivity, recession, inflation and protectionism. Also covered are structures and issues specific to the media such as concentration of ownership, privatisation, monopoly and state enterprises. The big players are studied in term of global monopolies and the economic forces underlying their strategic decisions. Special attention is paid to Asia and developing countries.

A6328 Critical Perspectives in Communication Studies
Critical and cultural approaches to media and culture in their social, economic, and political arenas. Topics include semiotics, discourse and narrative analysis, ideology and media, and related issues in critical and cultural analysis. Also covered are a range of issues in international and intercultural communication including communication and development, the new world information order, cultural imperialism, and globalisation. Specific examples focus on the interrelation between national and cultural agenda worldwide and in Singapore and the region.

A6329 Regional Communication Issues
This subject emphasises on the influence of the mass media on Asian societies. The historical, political, social and cultural dimensions in the development of mass communications in Asia, involving the structure and function of the media, will be main areas of focus. Some major topics of interest include ethics, legal limitations, freedom, copyright, censorship and cultural values.

A6330 Public Opinion & Persuasion
This subject focuses on psychological and social-psychological study of opinion and attitude change through media and public campaigns. Experimental and survey designs for measuring and monitoring public opinion, and classic case studies are reviewed. Applications to elections, marketing, and development campaigns are considered at the individual, group and societal levels.

A6331 Message Design & Production
This is a study of the writing styles and formats used in the mass media. In addition to examining critical and analytical skills in the print and electronic media, the emphasis will be on process: how to analyse each task, how to apply the principles discussed and why and how to visualise messages and stories. Students will be given the opportunity to write and produce short messages with a strong visual component.

A6332 Multi-Media Systems
This is a subject on conceptualising and planning multi-media and interactive environments for the communication industry. Combining visuals with audio and text for message presentation, distribution and interaction within various current and emerging media distribution channels. Computer based multi-media authoring tools and design of multi-media services in electronic network environments.

A6334 Seminar in Research
Focuses on the procedural issues in research methodology and design. Topics include content analysis, case studies, focus group interview, survey, and an introduction to experimental research.

A6335 Special Topic in Mass Communication II
In-depth coverage of specific areas of communication theory research & practices, including communication policy & planning and media regulation & policy development.

A6337 Strategic Advertising Management
Practical concerns and scope of advertising management and relevant theoretical perspectives and principles. Some of the topics include media planning, decision-making, message strategy, branding, creative approaches, account-servicing, and agency-client relationships.

A6338 Communication Management & Leadership

Seminar covers issues such as effective leadership, value-added management performance, managerial creativity, innovation, organisational knowledge creation and usage, as well as corporate productivity of info-communication and media organisations.

A6339 Strategic Public Relations Management
World views that drive various communication and public relations management strategies, audience segmentation strategies and techniques,different models of public relations available to corporate public relations managers. Value-creative means of building and strengthening cogent relationships with various external entities.

A6901 Special Topic: International Public Relations
This course seeks to provide you with some insights on the generic principles that one can use to understand public relations practice in different nations. We shall also explore various environmental factors that affect public relations practice in different nations. The course also seeks to encourage critical thinking that will promote pedagogical discussions to advance scholarship in this area. Note that this course is not a "hands-on" course designed to teach you specific public relations techniques that you can use when you find the need to practice public relations in a given country. On the contrary, it seeks to introduce you to factors in an organisation's environment in different countries that affect public relations activities there. The idea is that such knowledge should help you in conducting public relations in specific countries.

A6902 Special Topic: Organisation Communication And Conflict Management
An in-depth coverage of specific areas of communication theory research & practices, including organisational communication and conflict management. Overarching theories of how humans interact within the organisation will be discussed and students will be asked to use these theories to analyse organisations and the conflicts that take place within them. We will also focus on developing practical skills to enhance students' ability to effectively communicate and resolve conflicts within the organisational context.

A6903 Special Topic: Media & Conflict
This course focuses on challenges related to media coverage of new emergencies-ethno-religious conflicts and terrorism. The focus would be on both international and local media. While internal media intensifies the process of elaborating and allocating characteristics to groups of people defined as enemy in multi-ethnic populations, international media broadcast stories of war and social fragmentation from faraway places to attract audiences to sell to audiences. The latter typically reacts in two ways: either it oversimplifies a conflict or succumbs to exaggeration. We would also look Islamic militancy, among other issues. The course has a significant history component as well. Understanding the structure and role of media in volatile places such as South Asia, Middle East, former Yugoslavia and elsewhere is vital to the understanding of the link between media and conflict. This course will enable students to acquire a deeper understanding of the dynamics of conflict and how media complicates or eases the situation.

A6904 Special Topic: Convergent New Media: Challenges & Opportunities
The emerging trends of new media technologies ranging from electronic mass media, computers and Internet, consumer electronics, telephony and satellite technologies will be explored. The political, economic, social, philosophical and legal issues involved in the evolution, diffusion and use of new and convergent communication technologies will be examined. The need to apply convergent media technologies in the contexts of media management and marketing will be discussed.