B.SC INFORMATION SCIENCE AND MEDIA STUDIES PROGRAMME

Programme Regulations Manual

02 February, 2018

THE MISSION OF THE PROGRAMME

The undergraduate programme in Information Science and Media Studies is aimed at developing competent, creative, innovative, entrepreneurial and ethically-minded persons, capable of creating value in the diverse fields of media and communication in today's digital age and beyond, drawing on computer-driven advances in information science and technology. The overall intention is to nurture individuals who are technically skilled, creative, innovative, professionally competent, enterprising, and zealous for the common good, with the ability to make free and morally upright decisions, and who can thus impart positive values in service to society.

The programme will provide intensive practical and theoretical courses, which are designed to prepare the students to work in modern day industries as digital information and media designers, producers, implementers, administrators as well as analysts. Career prospects for graduates of this course include computer software programming; web and mobile applications development; online broadcast design; audio-visual production including sound and visual effects; animation and games for entertainment, advertisement and various forms of instructional content; social network analysis, etc. The programme will emphasize particularly the need for high ethical standards in the exercise of professional work, training, teaching, and obligations. Hence, the curriculum will be suffused with courses that deal with human values, analytical and critical thinking and the appropriate design and use of digital media systems.

THE PHILOSOPHY OF PROGRAMME

The programme aims to provide a synergy between the study of information as a science and mediated communication as a practice. And towards this end, it draws on advances in information technology and its applications in the field of media works and studies.

The programme is largely driven by the need to facilitate, through adequate theoretical and practical training, the emergence of competent professionals in the area of design, production, implementation and administration of digital media systems and information science.

Besides treating traditional communication principles and practices, the programme content ranges from foundational concepts in information technology and design to specialized skills required for industry-standard creative digital design and production. Mathematical, statistical and engineering concepts, especially in their applied mode, are also relevant.

As a fundamental principle, the programme emphasizes interactions between the industry players, lecturers and students, with the goal of ensuring relevance to the industry as well as driving the innovation needs of the industry.

Together with the technical skills and competencies, the programme also places emphasis on a holistic development of the positive character traits of the students. Such traits could

be critical success factors in the team work required for professional success in the creative industry.

GUIDING PRINCIPLES FOR THE PROGRAMME

The following basic points are the guiding principles for the programme:

a. The undergraduate degree programme in Information Science and Media Studies will be offered to secondary school leavers, thus preparing them to play an active role in nation building.

b. The programme will impart an education that is relevant to the needs of the nation and of international standard. The relevance of the programme's content will be ensured by fostering a strong relationship with the industry.

c. The programme will give particular emphasis to teaching and research. The academic staff will be encouraged to engage in research and attend conferences of relevance across the world. This is expected to ensure a continuous improvement in their teaching and maintain its relevance to the needs of the nation.

d. The programme will be concerned with the integral formation of the individual and will lay special emphasis on the development of values and ideals. Professional ethics will permeate all teaching activities in the programme.

GOALS OF THE PROGRAMME

The aims and objectives of the programme include but are not limited to the following:

a. To produce graduates that will be competent in the application of information science to various fields of digital media practice, such as scientists, designers, producers, implementers and researchers at the service of the broadcast, film, public relations, advertising, new media and other related industries.

b. To equip the students with research skills (besides a practical approach to teaching and learning) at the service of the advancement of innovations in the target industries.

c. To educate and train the critical mass of experts that will make Nigeria play a leading role in the global advancement of new media and information science and technology for effective and efficient communication.

d. To educate and train students as communication professionals with expertise in multimedia principles and practices.

e. To educate and train students as communication professionals with expertise in media convergence principles and practices.

f. To offer an integral formation with emphasis on the development of values and ideals that will help prepare the students to play leadership roles in such industries.

GENERAL REGULATIONS OF THE SCHOOL OF MEDIA AND COMMUNICATION

Preamble

The regulations that govern the courses leading to the four-year degree of a Bachelor of Science in Information Science and Media Studies are as stated below. These provisions may be amended from time to time by the University Senate.

1. **Degree**

The School shall provide a programme of study that will lead to the degree of a Bachelor of Science in Information Science and Media Studies.

2. **Admission and Matriculation Requirements**

Candidates for the undergraduate programme shall be accepted at the 100 level for a four-year programme. As from the 2017/2018 academic session, direct entry applicants can be admitted into 200 level for a three-year course.

Admission into the programme, at the 100 level, will ordinarily be based on the candidate's performance at the Unified Tertiary Matriculation Examination (UTME) and the ability to meet other requirements that the University may indicate. In addition, the candidate should possess a General Certificate of Education (G.C.E.) Ordinary Level pass at Credit level, or its equivalent, in five relevant subjects, including English Language and Mathematics.

To gain admission into the 200 level, the candidate, in addition to passing the evaluative test of the Pan-Atlantic University, will need to possess either Two 'A' level passes in Arts or Social Science subjects or a tertiary level certificate such as NCE, OND or HND.

3. **The Semester Course System**

3.1 The undergraduate programme in Information Science and Media Studies will be run on the semester course basis, and there will be two semesters in the academic year.

3.2 Instruction in the programme shall be by courses, and it will be mandatory for students to take an approved combination of courses in any semester.

3.3 An evaluation of the courses will be carried out in terms of course units. For this purpose, one course unit is defined as one lecture/seminar/tutorial hour or two hours of practical class per week, for the duration of a semester. Ordinarily, students shall be expected to register for a prescribed number of units in each academic year. This number will be determined by Senate based on the recommendation of the School Board.

3.4 There shall be four levels of courses in line with the years of study. The levels shall be numbered respectively as 101-199, 201-299, 301-399 and 401-499. Each of these numbers shall be prefixed by a two or three letter subject code.

3.5 Students will be required to complete their registration for the courses within the period stipulated by the School. Amendment of this registration will be allowed through the addition or deletion of courses but it must take place within six weeks of the commencement of lectures.

3.6 Direct entry and transfer students that enter into the second year of the programme will have to take some compulsory courses from the first year prior to their graduation from the University. However, if the Faculty Board assesses that a student has done any of the courses elsewhere, such a student will be exempted from taking the course. The courses concerned are listed below.

- GST 103: Use of Library, Study Skills and Information Communication Technology (ICT)
- GST 104: Logic, Philosophy and Human Existence
- GST 106: History and Philosophy of Science
- ISM 101: Introduction to Information Science
- ISM 102: Introduction to Mathematical Methods
- ISM 105: Introduction to Basic Computer Tools & Computer Science
- ISM 106: Design Principles and Computer Aided Design in Media (2 units)
- ISM 108: Programming Languages & Packages for Digital Media

4. Examinations and Grading System

4.1 At the end of each semester, students will be examined on all the courses they have registered for and been taught during that period. They shall subsequently be credited with the number of course units assigned to the courses that they pass.

The assessment of students will be based on a combination of continuous assessment (tests, assignments, etc.), class participation and examinations. To be eligible to sit for any examinations, students will be expected to attend a minimum of 80% of the lectures of any course registered for.

All courses registered for will be taken into consideration during the computation of results. Students will not be credited for courses that they did not register for even if they are inadvertently allowed to take the examinations and pass them.

Failure to take the examination in a course for which one has registered will attract a score of 0.0, which will have the consequent effect of lowering the student's Grade Point Average.

4.2 Special examinations to enable a student graduate may in exceptional circumstances be held by order of Senate

4.3 Grades will be awarded based on the scores of the students as follows:

Per cent score	Grade point	Letter Grade
70 – 100	5.0	A
60 – 69	4.0	B
50 – 59	3.0	C
45 – 49	2.0	D
0 – 44	0.0	F

For the purpose of description, a score below 2.0 Grade Point (from letter grade D) constitutes a failure. The following qualifications shall be applied to the grades:

A	Excellent
B	Good
C	Fair
D	Pass
F	Failed

To obtain the Cumulative Grade Point Average (CGPA) of the student, the grade point assigned to the mark obtained in each course is multiplied by the units of that course. The total from all the courses is added up to give the total weighted grade point. This total is then divided by the total number of units taken by the student to give the grade point average.

5. Retention and Progression

To remain in the School, students will be required to ensure that their CGPA does not fall below 1.5. If a student's CGPA falls below 1.5, the student will be placed on probation. If the student fails to improve and, after one year of probation, his/her CGPA remains below 1.5, that student will be asked to withdraw. A student on probation will not be permitted to register for more than 18 units.

6. Period of Study and Requirements for the Award of a Degree

The normal period of study for an honours degree shall be eight semesters for 100 level entrants and six semesters for direct level entrants. The minimum number of course units for the award of a degree shall be 155 and 128 for 100 level entrants and direct level entrants respectively.

The determination of the class of degree shall be based on the weighted grade points of all the courses taken, including the courses that are repeated. The award of the degree with honours shall be dependent on the student having obtained a Cumulative Grade Point Average of at least 2.0 in addition to fulfilling other minimum requirements for an honours degree.

The following classes of degree are approved for the CGPA indicated:

Class of Degree	Cumulative GPA
First Class	4.5 - 5.0
Second Class (*Upper Division*)	3.5 – 4.49
Second Class (*Lower Division*	2.4 – 3.49
Third Class	1.5 – 2.39

The maximum number of semesters for the award of an honours degree shall be ten semesters. A student who spends more time than this to complete the degree programme will ordinarily not be eligible for an honours classification.

B.SC INFORMATION SCIENCE AND MEDIA STUDIES PROGRAMME STRUCTURE

<u>**FIRST YEAR COURSES**</u>

Course Code	Course Title	Unit	Category
	First Semester		
ISM 101	Introduction to Information Science	3	Compulsory
ISM 103 (COM 101)	Introduction to Communication	2	Compulsory
ISM 105	Introduction to Basic Computer Tools & Computer Science	3	Compulsory
ISM 107 (COM 107)	History of Media, Communication & Development	2	Compulsory
ISM 109	Principles of Economics	2	Compulsory
GST 101	Communication in English I	2	Compulsory
GST 103	Use of Library, Study Skills and Information Communication Technology (ICT)	2	Compulsory
GST 104	Logic, Philosophy and Human Existence	3	Compulsory
GST 108	Introduction to Quantitative Reasoning	3	Compulsory
TOTAL		**22**	
	Second Semester		
ISM 102	Introduction to Mathematical Methods	3	Compulsory
ISM 104	Creativity and Innovation	2	Compulsory
ISM 106	Design Principles and Computer Aided Design in Media	2	Compulsory
ISM 108	Programming Languages & Packages for Digital Media	3	Compulsory
ISM 110	Creative Media Writing	3	Compulsory
ISM 112 (COM 104)	Communication and African Civilization	2	Compulsory
ISM 114 (BUS 102)	Principles of Management	2	Compulsory
GST 102	Introduction to Christian Theology	3	Compulsory
GST 105	Communication in English II	2	Compulsory
GST 106	History and Philosophy of Science	2	Compulsory
GST 107	World Civilizations	2	Compulsory
TOTAL		**26**	

SECOND YEAR COURSES

Course Code	Course Title	Unit	Category
	First Semester		
ISM 201	Introduction to Audio, Video & Graphics Editing Packages'	2	Compulsory
ISM 202	Media Production Process	3	Compulsory
ISM 205	Freehand Sketches	2	Compulsory
ISM 207	Digital Colour Technology	2	Compulsory
ISM 209	Web-based Technologies & Multimedia	3	Compulsory
ISM 211	Introduction to Database Systems	3	Compulsory
ISM 213 (COM 201)	Culture and Critical Analysis	2	Compulsory
GST 201	Communication in English III	2	Compulsory
GST 202	Philosophical Anthropology	2	Compulsory
ENT 201	Entrepreneurship I	2	Compulsory
TOTAL		**23**	
	Second Semester		
ISM 203	Applied Computer Graphics	3	Compulsory
ISM 204	Introduction to Image Processing & Application	3	Compulsory
ISM 206	Introduction to Multimedia Scripting	3	Compulsory
ISM 208	Multimedia Database Systems	2	Compulsory
ISM 210	Mobile-based Technologies and Multimedia	3	Required
ISM 212	Statistics and Probabilities	2	Compulsory
GST 203	Communication in English IV	2	Compulsory
GST 204	Peace Studies, Conflict Resolution and General Ethics	3	Compulsory
ENT 202	Entrepreneurship II	2	Compulsory
TOTAL		**23**	

THIRD YEAR COURSES

Course Code	Course Title	Unit	Category
	First Semester		
ISM 301	Media Ethics	2	Compulsory
ISM 303	Audio & Video Special Effects I	2	Required
ISM 305	Interactive & Motion Graphics	3	Compulsory
ISM 307 (COM 307)	Research Methodologies	2	Compulsory
ISM 309 (COM 321)	e-Publishing	2	Compulsory
ISM 311	Enterprise Resource Planning	3	Compulsory
ISM 313	Introduction to Social Media Network	2	Compulsory
GST 302	Life Skills and Personal Effectiveness	2	Compulsory
GST 303	Nigerian Peoples and Culture	2	Compulsory
TOTAL		**20**	
	Second Semester		
ISM 302	Fundamentals of Television and Display Technologies	2	Compulsory
ISM 304	Digital Audio & Video System Technology	2	Compulsory
ISM 306	Computer Animation Production	3	Compulsory
ISM 308	Game Design and Development I	2	Required
ISM 310	Marketing Communication	2	Compulsory
ISM 312	e-Commerce and Business Communication	2	Compulsory
ISM 314	Fundamentals of Film & Cinematography	3	Compulsory
ISM 316 (COM 403)	Introduction to Media Management	2	Compulsory
ISM 318 (BUS 402)	Business Strategy	2	Compulsory
ISM 320	SIWES (3 months)	**6**	Compulsory
TOTAL		**26**	

FOUTH YEAR COURSES

Course Code	Course Title	Unit	Category
	First Semester		
ISM 401	3D Modelling & Technology	3	Compulsory
ISM 403	Internet Broadcasting	2	Compulsory
ISM 405 (COM 401)	Media Law & Policy	3	Compulsory
ISM 407	Project I	3	Compulsory
TOTAL		**11**	
	Second Semester		
ISM 402	Production Management (TV)	3	Compulsory
ISM 404	Professional Ethics	2	Compulsory
ISM 406	Digital Rendering	3	Compulsory
ISM 408	Project II	3	Compulsory
TOTAL		**11**	
	4 Electives (8 units) from below	**8**	
ISM 409	Digital Speech Processing	**2**	Elective
ISM 410	Game Design and Development II	**2**	Elective
ISM 411	Audio & Video Special Effects II	**2**	Elective
ISM 412	Human Computer Interaction	**2**	Elective
ISM 413 (COM 416)	Entertainment Media	**2**	Elective
ISM 414	Computer Security	**2**	Elective
ISM 415	Special Topics in Digital Media	**2**	Elective
ISM 416	Natural Language Processing	**2**	Elective
ISM 417	Instructional and Educational Media	**2**	Elective
Grand Total		**170**	
Total Compulsory		**155**	

COURSE DESCRIPTION

100 LEVEL – FIRST SEMESTER

ISM 101 Introduction to Information Science

This course is centred on information science in the digital age. Topics to be covered include: The definition of data, information, and information technology. Types of Data. Information vs. Knowledge. Information Theory. Information technology systems: Brief history of electronic communications and digital computer systems; mobile systems; satellite, optic fibre connectivity. Information Systems. Information Organization. Information Representation. Information Processing. Information Management. Information Policies.

ISM 103 (COM 101)   Introduction to Communication

An exploration of the beginnings of human communication and media from earliest times to modern day. Students will investigate the development of art and writing, oral traditions, and how print media have supported the growth of electronic media. Students are also introduced to an overview of the growth of communication media such as songs, newsletters, newspapers, books, journals, magazines, radio, television, telephone and how the new communication technologies have created the global village. It is also an introduction to the theories of mass communication and mass communication models and their use in information exchange, education, and development. Relationships between human communication, society and mass media are explored.

ISM 105 (Introduction to Basic Computer Tools and Computer Science)

Introduction to computer systems, operating systems and application software. Hands-on lessons in popular operating systems including Linux. Hands-on lessons in word processing, presentation, spreadsheet, database and Internet services. Fundamental computer science concepts and skills including problem solving, design, programming using Python language for illustrations. Illustrations with information systems.

Without prior knowledge of computer programming as prerequisite, this course should expose the students to computer science basics. The course uses Python language to teach fundamental programming concepts. Mastery of the course should enable students get involved in intermediate level programming of various application software driven information systems.

ISM 107 History of Media, Communication & Development (COM 107 History of the Nigerian Mass Media)

This course addresses the growth and development of the media industry and Journalistic style in Nigeria. Starting from the traditional modes of communication in oral tradition, it

traces the advent and nature of the colonial press and radio, and ultimately the post-colonial press, radio, television and digital media. The growth of local advertising, public and private media, video film productions, and their contribution to the Nigerian economy, society and culture are some of the issues the course explores. Key historical events and personalities in the industry are examined. Their contribution to political economy, religious and cultural life of the people.

ISM 109 (ECO 111) Principles of Economics

An introduction to the various issues involved in the study of Economics. The course studies the nature of economic science, the methodology of economics and major areas of specialisation in economics. It stresses the historical development of ideas, major findings in the various areas of specialisation, elementary principles of micro and macroeconomics, current issues of interest and probable future development.

GST 101 Communication in English I

Effective communication and writing in English. Language skills. This course is an overview of grammatical structure. Attention will be paid to the parts of speech (nouns, pronouns, verbs, prepositions, adjectives, adverbs, conjunctions, and interjections) as well as markers of noun (articles, quantifiers predetermines, demonstratives) and modality in verb use. The course will also study phrases and clauses, sentence structure, the sentence in use, punctuation, capitalization and spelling. It will provide an introduction to paragraph structure, critical thinking in writing, speech planning and organization.

GST 103 Use of Library, Study Skills and Information Communication Technology (ICT)

Brief history of libraries, library and Education. University libraries and other types of libraries. Study Skills (reference services) reading and comprehension; listening and comprehension; note-taking and note-making; word processing; the use of dictionaries, encyclopaedia and other reference materials; the library and learning; organization of the library system; finding information in a library; database resources; bibliography and referencing techniques in the social sciences and humanities. Information Communication Technology: the use of the Internet and other digital resources: e-learning, e-materials, etc. Copyright and its implications.

GST 104 Logic, Philosophy and Human Existence

A brief survey of the main branches of Philosophy. Rudiments and dynamics of critical thinking as a major component of knowledge production. Such forms of knowledge as good and bad arguments, the capacity to think clearly and rationally, to engage in reflective and independent thinking and to reason logically, coherently and purposefully towards a particular end. Topics include: logic and logical reasoning: the nature of reasoning: deduction and induction; the structure of argumentation; forms of fallacies; types of discourse; techniques for evaluating arguments; symbolic logic. Human existence contrasted with animal and material existence.

GST 108 Introduction to Quantitative Reasoning

Thinking Critically: Living in the Media Age; Propositions and Truth Values; Sets and Venn Diagrams; Analyzing Arguments; Critical Thinking in Everyday Life. Approaches to Problem Solving: Working with Units; Problem-Solving with Units; Problem-Solving Guidelines and Hints. Numbers in the Real World: Putting Numbers in Perspective; Dealing with Uncertainty; Index Numbers; How Numbers Can Deceive. Managing Money: Taking Control of Your Finances; The Power of Compounding; Savings Plans and Investment; Loan Payments, Credit Cards and Mortgages; Income Taxes; Understanding the Federal Budget. Statistical Reasoning: Fundamentals of Statistics; Statistical Tables and Graphs; Graphics in the Media; Correlation. Putting Statistics to Work: Characterising Data; Measures of Variation; The Normal Distribution; Statistical Inference. Probability: Living with the Odds: Fundamentals of Probability; Combining Probabilities; The Law of Large Numbers; Assessing Risk; Counting and Probability. Exponential Astonishment: Growth: Linear versus Exponential; Doubling Time and Half-Life; Real Population Growth; Logarithmic Scales. Modeling of Our World: Functions: The Building Blocks of Mathematical Models; Linear Modeling; Exponential Modeling. Further Application of Maths.

100 LEVEL – SECOND SEMESTER

ISM 102 Introduction to Mathematical Methods

Linear Algebra: Vectors, Linear transformations, matrices. Ordinary Differential Equations: Linear and non-linear equations, Degree and order, First order equations, Separable variables. Equations reducible to separable form, Exact equations, Linear equations with constant coefficients, Integrating factors, Initial-value problems, Higher-order equations, Solutions by Laplace transforms, Applications of differential equations. Laplace and Fourier Transforms: Laplace transforms of elementary functions, Inverse Laplace transforms, Periodic Functions, Fourier transform, Fourier coefficients, Parsevals Theorem.

ISM 104 Creativity and Innovation

This course introduces the students to the concept of creativity and the development of creative mindset. It also deals with innovation concept and innovation as a discipline in the context of organizations especially in media related businesses. The course should help the students appreciate the connection between creativity, innovation and entrepreneurship.

ISM 106 Design Principles and Computer Aided Design in Media

Design concept and general principles. The use of state of the art software packages in media design. Visual design: print, web pages, video games, animation, motion graphics. Visual design approaches: Wireframe, Mock-up. Prototype. User-centred design: UX design, UI design - material design, bootstrap design, foundation design. Audio design.

ISM 108 Programming Languages & Packages for Digital Media

Programming languages typical to different media categories e.g. C++/C# for Games, Java for Android, Objective-C/Swift for iOS, JavaScript for frontend, JavaScript for cross-platform, Python for cross-platform, C# for mobile cross-platform, PHP for Web, Java for enterprise systems, C# for enterprise systems. Node.js for multi-io systems. Integrated Development Environments: Eclipse, Microsoft Visual Studio. App Designers. Visual programming languages examples: E.g. Blender, Pure data (Pd), Unreal Engine Blueprints. Special focus on JavaScript in the course as a cross-platform programming language.

ISM 110 Creative Media Writing

Students undergo this practical creative writing course as a means of fostering creativity. The course deals with the fundamentals of scripting across all media. The students will be exposed to the challenges of writing particularly for audio and audio-visual media and developing scriptwriting competency. The course emphasizes the basic principles and techniques of narration, with a focus on creating and/or following scripting templates, character development, effective dialogue, and storyboarding. The differences in scripting for the different media will also be explored.

ISM 112 (COM 104) Communication and African Civilization

African oral traditional communication structure, form and content; also a survey of past and present modern mass media systems as influenced by the African Political Culture. The course will examine the role of communication and communication media in the development of African Civilization. Different types of communication media their use and interpretations.

ISM 114 (BUS 102) Principles of Management

Management principles and practices are taught in this course including of finance, personnel management, strategy, operations management etc. It considers the analysis and interpretation of governance issues, business planning, marketing and the ethical principles driving management in the world of business.

GST 102 Introduction to Christian Theology

The Existence of God; Revelation; Supernatural Faith; God's Nature and Action; The Holy Trinity; Creation; Elevation to the Supernatural Order and original Sin; Jesus Christ, True God and True Man; The Incarnation ; The Passion and Death on the Cross; Resurrection, Ascension and Second Coming; The Holy Spirit, the Holy Catholic Church; The Communion of Saints and the Forgiveness of Sin; History of the Church; The Church and the State; The Resurrection of the Body and Life Everlasting; Introduction to the Liturgy and the Sacraments; Baptism and Confirmation; The Eucharist; Penance; Anointing of the Sick; Holy

Orders; Marriage; Freedom, Law and Conscience; Morality of Human Acts; Grace and the Virtues; The Person and Society; Personal Sin; The Ten Commandments; Prayer.

GST 105 Communication in English II

Communication in English II builds on the foundation laid by the first part of the course. It aims to strengthen the foundation and further understanding of the grammatical elements through increased writing and reading exercises. The course reviews the use of the parts of speech in writing as well as sentence construction, but it focuses in particular on difficult verbs, the gerund, voice, mood, agreement, high frequency spelling, punctuation, and the rules governing the use of capital letters. It will also provide guidelines on critical reading, summary writing, and speech writing while reviewing argument and paragraph structures.

GST 106 History and Philosophy of Science

An introduction to the history and major branches of philosophy and the natural sciences from the pre-Socratic to the present time. Man – his origin and nature. Man and his cosmic environment: renewable and non-renewable resources. Man and his energy resources. The value and limits of science. Scientific methodology. Science and Technology in society and at the service of man. Science and human values. Elements of environmental studies.

GST 107 World Civilizations

The course surveys the birth and spread of world civilizations from the Middle East. A historical and cultural survey of the civilizations in India and China. The Greek and Roman civilizations. The Byzantine Empire and the parallel rise of the Islamic religion and culture. Western Europe during the Early, High and Late Middle Ages - The founding of the Universities; The Renaissance; The Scientific Revolution and the Enlightenment; Liberalism; The industrial Revolution, Nationalism; Totalitarianism. The Modern World.

200 LEVEL – FIRST SEMESTER

ISM 201 Introduction to Audio, Video & Graphics Editing Packages

This is laboratory course work on the use of audio, video and graphics editing packages. Image editing tools: Photoshop, Gimp [Free alternative]. Game audio: e.g. Wwise, fmod. Video audio: e.g. Logic Studio, Adobe Audition. Video Composition: e.g. Final Cut Pro, Avid Media Composer, Adobe Premiere. Special Effects Studios: e.g. Adobe After Effects, Node Studio, Fusion Studio, Smoke Studio. Free alternatives: Ubuntu studio. Data visualization tools for non-developers: e.g. Raw (layered on D3js), Datawrapper, tableau public, infogram. Data visualization tools for developers. e.g. D3js, VTK, ParaView (layered on VTK).

ISM 203 Applied Computer Graphics

Introduction to computer graphics. Brief history of computer graphics. An Introduction to Computer Graphics Applications: An overview of selected applications – graphic design, infographics, video games, CAD, etc. Working with Vector Graphics: Vector graphics vs.

raster graphics. Vector drawing in the computer. Creating shape primitives, path and bezigon. Applying transform. Editing shapes. Knife. Assign color and gradient. Working with Text: Text styles. Flow text inside path Attach text to path. Kerning and tracking. Developing a layout with drawing and text. Working with Basic Raster Graphics: Scanning process. Basic image cleanup, color-correction and cropping. Developing Advanced Layout & Illustrations: Developing page layout. Importing artwork and text. Using layers. Clipping Path. Tracing bitmap etc.

Computer graphics APIs: Introduction to OpenGL - Simple OpenGL commands for plotting points, drawing lines, polygons, triangle strips, quad strips etc. Drawing sphere, torus etc. with colour attributes- Shading commands. OpenGL programming illustration in Python. WebGL.

ISM 205 Freehand Sketches

Introduction to drawing techniques. Practical exercises in free hand sketching of objects and scenes.

ISM 207 Digital Colour Technology

Introduction to colour theory. Human psychovision system.   Primary colours. Compute representation of colour. Digital colour technologies. Applications of digital colours.

ISM 209 Web-based Technologies & Multimedia

Introduction to web-based technologies, their principles of operation and application in media. Web technology stack. Programming paradigms: Backend, Business Logic, Frontend (HTML/CSS/JavaScript). Website multimedia. Responsive websites across desktop, mobile and tablets. JavaScript Frameworks: classical (e.g. jQuery); emerging (e.g. React, Angular JS). Website application frameworks / content management systems (e.g. Liferay, Odoo, Wordpress). Emerging development paradigms (e.g. Progressive Web). Connecting mobile apps to backend services: regular; highly scalable backends (e.g. multi-io with javaplay framework, node.js, python tornado; third-party tools e.g. Google firebase).

ISM 211 Introduction to Database Systems

Introduction: Database Systems vs. File Systems, terminology. Three levels of data abstraction, Database Languages, System Architecture of a Database System, Classification of DBMS. Data Modeling: Conceptual Model, Internal Model, External Model and Physical Model, Entity-Relationship (ER) Model, Entities and Entity types, Relationship and Relationship type, Constraints, Weak Entity Types, ER Diagrams. Semantic object model. Process of Database. SQL vs NoSQL Databases.

Design: Requirement Analysis, Conceptual Database Design, Database Schema Design. Database and Database Application Design: Database design using entity-relationship and semantic object models, database application design. Terminology in Relational Data Model, Keys, Integrity Constraints, Primitive Operations on Relations, Relational Algebra (RA), Relational Algebra Operations, Relational Completeness, Additional Operations on

Relations. Database Implementation: Foundations of relational implementation. Structured Query Language (SQL): DML Features in SQL, DDL in SQL, Updates in SQL, Views in SQL, Embedded SQL, Query-by-Example (QBE). Transaction, Concurrency, Recovery and Security Issues. Normalization: Armstrong's Inference Rules and Minimum Covers, Normal Forms: First Normal Form, Second Normal Form, Third Normal Form, Boyce-Codd Normal Form. Trends in Database: Current Trends in Database Systems: Distributed Database Management Systems, Client-Server database systems, Open Database Connectivity (ODBC) standard, Knowledge-Based Systems, Object-Based Systems, data warehousing and data mining concepts, Web databases, NoSQL Databases.

ISM 213 (COM 201) Culture and Critical Analysis

This course examines cultural theory and analyses cultural products and the cultural production process. It explores the principles and canons of cultural analysis and criticism; orality, literacy and electracy; reading culture versus SISOMO culture; Africa and the political economy of cultural production and consumption in the global village; the celebrity phenomenon. Students will investigate popular culture and use various concepts and approaches to investigate the phenomenon of the popular genres of television, and elements of popular culture in the media, applying the theories examined and discussed

GST 201 Communication in English III

This course takes up a more advanced treatment of effective writing and reading in English Language. It provides a step-by-step guide to the entire writing process: the ideas gathering phase, planning, audience analysis, writing the drafts, and editing. The course will revisit the writing of paragraphs to consider anew paragraph structure and the editing of paragraphs. Essay writing is a key focus of the course, and the different types of essays will be studied: narrative, descriptive, expository, argumentative, and process explanation. Other forms of writing to be studied are journals, diaries, precis, and quick information style writing. Attention will be paid to ensuring clear understanding, eliminating wordiness, redaction style, connecting words, varieties of content, organization, sentence structure, diction, unity, cohesion, and use of language. Reading forms an important component of this course, and topics to be studied include: themes, phrase reading, participation, skimming and scanning, and the analysis of speeches. Other topics to be covered are phonemic awareness, phonics fluency, and vocabulary comprehension.

GST 202 Philosophical Anthropology

An introduction to the philosophical basis of considerations about the human person. The course seeks to establish what the human person is. With the aim of bringing the students to a due appreciation of the human reality, a study will be made of the human potencies and faculties, such as the understanding, the imagination, and the will. Particular attention will be paid to human rationality and freedom, qualities which, among others, set the human person apart from other material beings. Fundamental questions about the relations between human nature, religion and culture, as well as the basis of the dignity of the human

person will also be dealt with. A study will also be made of various conceptions of the person which are based on ideology.

ENT 201 Entrepreneurship I

The course lays the groundwork for understanding how to be innovative and entrepreneurial. It is centred on the topics of creativity, learning and purposeful effort. It encompasses a general overview of the principles, theories and practices of innovation and entrepreneurship, the innovation process, and characteristics of entrepreneurs. It will provide students with the knowledge and understanding of how to manage innovation. The course will also explore planning as it relates to owning and operating a business, marketing concepts, licensing, financing, accounting, record keeping systems, and the legal aspects of owning and operating a business.

200 LEVEL – SECOND SEMESTER

ISM 202 Media Production Process

Introduction to Production activities. Learning the video camera. Camera effects. Getting to know the lighting (instruments and characteristics). Using the time-code. Working with audio (introduction). Capturing and Importing media: Learning the right technique of batch capturing using DV camera. Using fire wire IEEE 1394/ i-link port. This also includes the right size and compression. Art of Editing: Introduction to Post-Production activities. Editing facilities and capabilities. The offline and online editing. Anticipating editing. Post-Production for multiple camera shoots. Producing and Directing Short Film and Video: Script writing and storyboard. Putting ideas into words. Developing analytical skills in order to objectively evaluate video production. Video Production: Exploring and executing a video production such as music video or TV commercial. Exporting and Compression: Learning the right bit rate for exporting. Different media will have different bit rate and compression. High quality DV compression is suitable for broadcasting while low compression of video is suitable for web casting or CD ROM.

ISM 204 Introduction to Image Processing & Application

Introduction: Applications of digital image processing, Overview of image processing and computer vision systems, Different types of image representation and storage, Multimedia applications. Image Perception: Light, luminance, brightness and contrast, the visibility function, Monochrome vision models, Color coordinate systems, Color vision models. Image Transforms: Two-dimensional spatial transforms, Intensity transforms, Morphological transforms, Image transform masks, Morphing and Warping. Image Enhancement: Point operations, Histogram modeling, Spatial operations, Transform operations, Multi spectral image enhancement. Edge detection: Gradient operators, Laplace operators, Boundary representation, Boundary extraction. Region and Shape representation: Run-length codes, Quad-trees, Geometrical features, moment-based features, Fourier descriptors, Hough transforms. Image segmentation: Amplitude thresholding and window slicing, Component

labeling, Thresholding and clustering, Boundary based approaches, Template matching, Texture segmentation. Image data compression: Pixel coding, Transform coding, Wavelet coding, JPEG and MPEG systems. Applications of digital image processing in media.

ISM 206 Introduction to Multimedia Scripting

Introduction to scripting in multimedia. Script writing, storyboarding. Use of software packages for multimedia scripting. Script writing software: E.g. FinalDraft, Celtx, Highland, Adobe Story. Storyboarding software with preset characters. Storyboarding software requiring drawing skills. Interpreted programming (scripting) languages for multimedia production: HTML5 related technologies including JavaScript, CSS, CSS pre-processors (e.g. Sass, LESS and Stylus), Canvas. Python scripting. C# scripting.

ISM 208 Multimedia Database System

Introduction to Multimedia Databases: Types of multimedia information, multimedia database applications, characteristic of Multimedia objects, components of a multimedia database management system. Multimedia Storage and Retrieval: Multimedia object storage, file retrieval structures, disk scheduling, server admission. Multimedia Information Modeling: Metadata for multimedia, multimedia data access, object-oriented models, temporal models, models and multimedia authoring. Query Multimedia Databases: Query processing and query languages. MMDBMS Architecture: Distributed MMDBMS architecture, client-server components, implementation Considerations.

ISM 210 Mobile-based Technologies & Multimedia

Introduction to mobile technologies, their operating principles and media applications. Mobile device: phone, tablet, wearables. Native application development: Platform specific (e.g. Android with Java, iOS with Swift); Platform independent (e.g. Android, iOS programming with C# Xamarin, ReactNative); Hybrid (e.g. Android, iOS with Apache Cordova, ionic); Do It Yourself (DIY) tools online. Connecting mobile apps to backend services: regular; highly scalable backends (e.g. multi-io with javaplay framework, node.js, python tornado; third-party tools e.g. Google firebase).

ISM 212 Statistics and Probabilities

Review of probability as a measure of uncertainty, sample points and events, combination of events. Binomial, Exponential, Normal, Gamma, Chi-Squared distributions; probability function, mean, variance, and moment generating function. Joint probability distribution and joint probability density function, marginal distribution, expected value, covariance and correlation; Statistical independence; Transformation of variable; Moment and moment generating function; Linear combination of random variable; Multinomial and Normal Bivariate distributions. Sampling distribution of, and S2; Central Limit Theorem; Approximation for discrete distributions; Sampling distribution for t and F. Point Estimation: Bias and unbiased estimator; principle of minimum variance unbiased estimation; Method of moment; Maximum Likelihood estimation. Interval Estimation: Population mean and

difference between two population mean using z-distribution and t-distribution. Regression Analysis.

GST 203 Communication in English IV

This course deals with the importance of business English and the different forms of its manifestation. The course will study different types of business writing (business letters, emails, reports, the executive summary, proposals, résumés, agenda, minutes, appraisal reports manuals and instructions, business proposals). It will also consider strategies for effective business communication, how to use persuasive language, and how to attain clarity as well as politeness in such writing. Other topics to be covered are: the interview, dialogue note taking, faxing and memos, engaging in conversation, listening, meeting and greeting, language of negotiations, telephone skills, making short presentations, cultural influence in our speech, introduction to protocol, asking questions, telephone etiquette, professional business letters and business vocabulary.

GST 204 Peace Studies, Conflict Resolution and General Ethics

Basic concepts in peace studies and conflict resolution. Peace as a vehicle of unity and development. Conflict issues. Types of conflict. Root causes of conflicts and violence in Africa. Peace building. Developing a culture of peace. Peace mediation and peace-keeping. Role of international organizations in conflict resolution. (ECOWAS, AU, UN etc.)

Human fulfilment and its main dimensions. Analysis of human actions. Ethical principles. Moral Absolutes. Virtue ethics, natural law. Consideration of some specific ethical issues: euthanasia, abortion, environmental ethics. Pacifism versus the just war tradition.

ENT 202 Entrepreneurship II

The work in this course is fully practical. Each group, made up of between six and ten students will be given as seed capital the naira equivalent of $250. Each group will register their business, open a bank account, mobilise additional funds and run the business throughout the semester. At the end of the semester, the business will be officially liquidated, the seed capital returned to EDC and the profit donated to a charity of their choice or used to improve the community around the University. At the very least, each group MUST break even and return the seed capital. A report will be submitted by each group focusing on how they have been able to use entrepreneurial principles learnt in ENT 201 and, more importantly, what they have learnt during their entrepreneurial journey.

300 LEVEL – FIRST SEMESTER

ISM 301 Media Ethics (COM 301)

The media ethics course enables students to explore theoretical, cultural and practical ethical issues of importance to media practitioners. It provides a theoretical framework within which to spot and analyze ethical issues in the mass media. Issues such as veracity, objectivity, respect for persons and their good name, intellectual freedom, slander,

misinformation, access to information, information policy, data privacy, computing ethics, and concerns with electronic transfer of information, will be considered. Current media ethics issues will be examined with emphasis on the need to evolve ethical standards.

ISM 303 Audio & Video Special Effects I

Introduction to audio and video special effects. Layer-based compositing software: e.g. Adobe AfterEffect. Node-based compositing software: e.g. Fusion Studio, Nuke Studio. Audio special effects software: e.g. Wwise, fmod.

ISM 305 Interactive & Motion Graphics

This course is to cover two-way interaction and adding motion to graphics with appropriate rendering. Graphics for interactive games, adverts, etc. HTML5-based designs and motion graphics packages: E.g. Google Web Designer, Adobe Animate Creative Cloud, Flash [Legacy] tools. Interactive data visualization. Programmatic data visualization tools: e.g. VTK (python programming), D3js (JavaScript programming).

ISM 307 (COM 307) Research Methodologies

The course introduces students to research design in the social sciences. They are exposed to different research methods, and learn how to formulate, clarify and match research topics with the appropriate method. Topics include the relation between theory and research, techniques of literature review, survey research, questionnaire design, interviewing techniques, observation, content analysis, the case study and experimental design. By the end of the course, students will be equipped with the skills to analyse, interpret, write and present quantitative and qualitative data.

ISM 309 (COM 321) e-Publishing

This is a practical course with a conceptual component which studies the publishing process (from manuscript to pre-press to marketing), paying particular attention to the way digital technology has revolutionized publishing. Its features include: e-book editing and copy editing in the digital platform, online publishing of books, magazines, newspapers and other content. The course studies also editing symbols and proofing symbols; publishing in the creative economy; academic publishing and trade publishing, and the use of computer graphics design tools such as CorelDraw and the Adobe Suite among others.

ISM 311 Enterprise Resource Planning

Use of software for the management and automation of various aspects of business processes. Such processes include demand and supply chains, back office operations, management information systems, etc.

ISM 313 Introduction to Social Media Network

Discuss different Social Media networks such as Facebook, Twitter, LinkedIn, YouTube, etc.; their operations, applications, management and impact on society. Social media data mining and analytics. Programmed data mining and analytics.

GST 302 Life Skills and Personal Effectiveness

This course provides practical strategies for improving self-management skills in order to develop one's effectiveness. It will dwell on how to manage difficult situations, maintain a sense of purpose and direction under pressure and develop the confidence to manage a wide range of situations and people. Through this course, the students will learn to make the most of all the personal resources at their disposal. They will be taught to harness their personal talents, energy and time, relative to what is most important, and then to channel the outcomes to achieve what is desirable. It focuses on such practical matters as personal development; interpersonal communication; etiquette and good manners; health and hygiene; money management; work and career.

GST 303 Nigerian Peoples and Culture

Study of Nigerian history, culture and arts in pre-colonial times. Cultural areas and their characteristics. Evolution of Nigeria as a political unit. Culture is a way of life and persons are defined by the cultures within which they live. An understanding of persons thus requires a knowledge of their culture. The course studies the ways of life of people in Nigeria. It examines the customs, traditions, beliefs, and values of various groups. While particular emphasis shall be placed on the various cultures found within Nigeria, a survey of the history and culture of people of the great empires of ancient and pre-colonial Africa will be made together with a study of Africa today and the African image in the contemporary world.

300 LEVEL – SECOND SEMESTER

ISM 302 Fundamentals of Television and Display Technologies

Introduction to television and other digital system display technologies and their applications.

ISM 304 Digital Audio & Video System Technology

Digital Video and Audio. Digitizing video and audio. Image production, storage and manipulation. Digital Nonlinear Editing: The promise of Digital Nonlinear Editing. The increasing complexity of the editing process. The coming together of film and video editing. The Editing Process. Film and Videotape Post-Production Procedures: Formats and Standards. Film editing procedures. The development of videotape. Integrating and orchestrating equipment via time code. Audio editing in the online room. Digitizing and

storing material. Editing on a Digital Nonlinear System: Digital Video and audio compression: techniques.

ISM 306 Computer Animation Production

Introduction to 2D and 3D Elements. An introduction to modeling and 2D/3D animation. Understanding coordinate system, vertex, faces and object. Concept of wireframe, surface and solid modeling. Construction planes and differences between object space and world space. Principles of animation in practice. Exposure to the principles of making characters alive. Students are introduced to principles of animation. Polygonal and Nurbs Modeling Introduction of Polygonal Modeling techniques which includes: the Box, using Edit Mesh, Smoothing Techniques, Subdivision Surfaces. Introduction of Nurbs Modeling techniques which includes: Utilizing NURBS toolbox, surface points and CVs. Importing and attaching NURBS surfaces, rebuilding surfaces, curve and surface approximation. Introduction to Graphic Animation Introduction to the graphic animation process which includes: Camera & Animating Camera, Set & Background (Image Plane), Light Linking. Animation Techniques Introduction to the animation process. Demonstration and supervision on animation techniques, animation controllers, graphs and editor. This includes: Walk Cycle and Facial Expression using Blend Shape. Dynamics animation Introduction to dynamics animation. Demonstration and supervision on Rigid Bodies, Soft Bodies, Constraint, Particles. Tips and tricks on rendering. Camera and Rendering Characteristics of cameras. Placing camera in a scene and modifying camera parameters. Understanding camera navigation buttons. Concept of rendering in 3D modeling. Render options and file output.

ISM 308 Game Design and Development I

Game Concept. Game Genres. Game Graphics. Game Audio. Designing Games. Game programming: e.g. C# and python programming for games. Game visual and audio special effects. Game engines: Blender, Unity, Unreal.

ISM 310 Marketing Communications

The art and science of marketing communication which will be reviewed as a basis for determining the need and type of communication solution which can effectively deal with marketing problems in different ways, employing communication tools like advertising and public relations to market or promote a product, persons, organization or idea. Digital Marketing: Search Engine, Social Media, Email, Website. Mobile marketing. Digital Ads Design Principles.

ISM 312 e-Commerce and Business Communication

The course examines the key concepts and practices in business and commerce in relation to the field of media and communication. The course emphasizes business communication, in terms of content and form, including business correspondence, presentation and reporting processes, business and market research procedures and all kinds of business transactions using the digital platforms.

ISM 314 Fundamentals of Film & Cinematography

Exploration of film as extension of photography. Systematic consideration of the basic aesthetic principles, photographic approach, affinities and art. Analysis of the properties of the film medium with regard to the realistic tendency and formative tendency, or realism (as exemplified by the Lumiers brothers) and expressionism (as exemplified by Melie), and the clashes/compromises between both. The issue of film/cinema as an art.

ISM 316 (COM 403) Introduction to Media Management

The media management course introduces students to the principles of managing a media organization, promotional events and media campaigns. The students will also be taught management skills involving large corporations as well SMEs, or community radio and television stations which are owned and run by journalists or the community. Topics covered include types of media organizations, media business processes, ownership structures, role of the manager, financial and employee management, staff relations, the marketing goals for a media organization, market analysis and programme planning, promotion, traffic, cost of air- time and sales of media product, distribution and pricing.

ISM 318 (BUS 402) Business Strategy

This course deals with business strategy as part of the framework of longitudinal approaches to management science. Topics treated in this course include strategic thinking versus short term approaches, establishing strategic goals, the use of SWOT analysis, PESTEL analysis, as well as issues such competitive advantage. Some specific strategy forms such as Blue Ocean strategy are explained.

ISM 320 SIWES (3 months)

During the SIWES, each student will undergo a practical on the job training in Media industry approved for its relevance to the student's major for 3 months in order to expose them to the practical applications of digital media. A program of training will be drawn by the Department and the Industry for each student, and a prescribed log book with daily recording of the student activities is to be kept by each student and appropriately signed. At the end of the program, a written report is to be submitted to the Department and each student to present a seminar on his/her industrial experience.

400 LEVEL – FIRST SEMESTER

ISM 401 3D Modelling & Technology

Introduction. Three-dimensional Modeling and Representation: Representation and modeling of objects; polygonal representation vs. solid modeling methods. Viewing and Camera Control: Frames of reference, viewing systems, and 3D transformations. Illumination Models: Basics of illumination models including ambient, diffuse, and specular lights. Image Processing: Basics of representing, storing, displaying, and manipulating 2D

images. Texture Mapping: How to map an image onto the surface of a 3D object, including texture subdivision, texture replication, and texture blending. 3D Modelling software: e.g. Maya, Cinema4D, Blender.

ISM 403 Internet Broadcasting

While reviewing the key phases of radio, television and mass media broadcasting, the course will focus on the modalities and peculiarities of internet broadcasting. Attention will be given to the developing technologies as well as the relevant legal aspects.

ISM 405 (COM 401) Media Law & Policy

This course will lead students to an understanding and knowledge of the media laws of Nigeria. They will also understand international media law as it pertains to journalists, freedom of information and human rights. Topics covered include an introduction to the general principles of law, various branches of law, the constitution and administrative law, the journalist and the courts, government restraints, in-camera directions, public disclosure, laws affecting the media and reporting, infringements on individual rights, privacy, obscenity, freedom of the press, treason, sedition, incitement, defamation, privilege, contempt of court, intellectual property, copyright and other aspects of press and broadcast media law. Attention is paid also to evolution of polices for the good and effective running of society.

ISM 407 Project I

Original individual student project related to a prescribed Digital Media problem involving literature review, identification, definition and formulation of the problem, theoretical investigations, modeling simulation, analysis and design.

400 LEVEL – SECOND SEMESTER

ISM 402 Production Management (TV)

At the completion of the course, students will understand the fundamentals of news and how to write different types of news stories for television and plan different types of content. They will also acquire the basic editorial skills needed to produce packaged stories. The course contents include: the basics of writing and interviewing for television news and current affairs programs; how to format television news programs and develop story ideas; learning the roles of director, producer; and the elements of pre-production planning.

ISM 404 Professional Ethics

This course is a study of applied ethics. Students are exposed to key practical questions in professional work, with special reference to Information Science and Media. The course deals with the following issues: striving for excellence in professional work, adherence to code of conduct, responsibility to members of the profession, to industry, to the community and general society.

ISM 406 Digital Rendering

Rendering techniques. Ray Tracing: Introduces the ray tracing rendering algorithm including the calculation of shadows, reflections, and refraction. Binary Space-Partitioning (BSP) Trees: An overview of binary tree structures for organizing geometric data to increase the efficiency of searching, manipulation, and rendering of large virtual environments. Rendering technologies. Rendering software. Render farm.

ISM 408 Project II

Second phase of investigations involving the implementation of the designed model, debugging, calibration, testing, data collection and analysis, and presentation of a comprehensive written report of the investigations.

400 LEVEL – ELECTIVES

ISM 409 Digital Speech Processing

Digital Speech Programming: Overview of Speech Technology, Speech-enabled Applications, Text-to-Speech (TTS) System, Speech Recognition (SR) System, Microsoft Speech API (MSAPI), Java Speech API (JSAPI)

ISM 410 Game Design and Development II

Advances in Game design and development using industry standard game engines: Unity (with C#), Unreal (with C++). Gamification: game principles in non-game contexts e.g. education, marketing, work.

ISM 411 Audio & Video Special Effects II

Advances in Audio & Video Special Effects. Industry standard software usage practicals.

ISM 412 Human Computer Interaction

Introduction to human psychology and Interplay with computer science. Overview of Computer-Human Interface. Formal Methods of Interface Design. Man-to-Machine and Machine-to-Man communication techniques. Ergonomic design.

ISM 413 (COM 416) Entertainment Media

The course is analysis of the nature, types, and context of production of entertainment content. The course will explore economic and socio-cultural dimensions of entertainment and its effects on mass audience. It will focus on reality show, game shows, talk shows, soap opera, music, and audiovisual content via media structure.

ISM 414 Computer Security

Fundamental of Computer Security. Risk Analysis in computer security. Hardware and Software Security Control, Viruses. Encryption and Cryptography Techniques. Security

Models. Telecommunication Security: Fundamentals, Issue, Objective and Threats, Security Services, Distributed System Security, The Trusted Network Interpretation, TNI Security Services, AIS Interconnection Issues, Firewalls (Gateway, Application, Cost and Effectiveness). Database Security: Security Requirements to Databases, Designing the Security, Methods of Protection, Security of Multilevel Database. Legal Issue and Current Legislation: Computer Crime, Software Violation, Crimes, Privacy Considerations, Corporate Policy, Managerial Issues, Government – based Security Standards. Secure software coding principles.

ISM 415 Special Topics in Digital Media

A course on current trends in digital media. E.g. Big data analytics, data visualization, machine learning, etc.

ISM 416 Natural Language Processing

Overview of Natural Language Processing: Definition, History of Natural Language Processing, Different Levels of Language Analysis [Phonology, Morphology, Syntax, Semantics, and Pragmatics], Applications [Text-based, and Dialogue-based, Natural Language Front Ends to Databases or Knowledge-based Systems, Text Generation, Machine Learning, Grammar Checker, and Speech Recognition and Synthesis], Organization of Natural Language Understanding. Linguistic Background. Transforming the Grammar Structures into Prolog. Syntactic Analysis: Parsing Technique [Top-down, Bottom-up, and Left-corner, Recursive Transition Network (RTN), and Augmented Transition Network (RTN) Parsers, Chart Parsers, Features and Unification. toward Efficient Parsing]. Semantics Analysis: Philosophical Issues in Semantics, Semantics and Logical Form for English, Others Semantic Interpretation [Case Grammar, Semantic Grammar, and Conceptual Dependency, Discourse and Anaphora Problems.

ISM 417 Instructional and Educational Media

Design and production of educational and other instructional media content. eLearning content standards: e.g. SCORM, AICC, xAPI (Experience API). Platform Implementation. Gamification. eLearning content creation tools: e.g. Lectora, Articulate, Captivate, Camtasia. Webinar implementation: e.g. Bigbluebutton.