2.5.2 Assignment

Weight:	30%
Type of Collaboration:	Individual
Due:	11:59pm, 4th June 2021
Submission:	The assignment is to be submitted to Turnitin by the due date.
Format:	The assignment is an individual assessment item. Students are expected to do some literature research on a topic about modern multimedia communication systems and produce a written report from the literature research. A number of possible topics are given in Instructions below and a student must choose one and only one of the topics for the assignment.
Length:	3000 words
Curriculum Mode:	Report

Prepare a report of 3000 words on a modern application of digital multimedia communications. The application should be of significant value. Possible topics are:

- Multimedia real-time video streaming
- Multimedia communications in eHealth
- Multimedia communications via modern networks, such as wireless sensor networks, cognitive radio networks or Internet of Things. Note that one type of networks should only be included.
- Multi-user video conferencing
- High efficiency video coding and its applications
- Machine learning in multimedia communication systems

A student must choose one of the above topics for the report. The written contents of the report can be divided into **Introduction**, **Main Report Body** and **Conclusion**.
The Main Report Body should consist of **three parts**:

- Application itself
- Multimedia techniques and/or technology used in the application
- Communication techniques and/or technology used in the application

Basic source coding techniques which are already covered in the unit materials of this unit should not be covered in details in the report. Multimedia techniques and technology may include the acquisition of the multimedia, and should include the coding of the acquired multimedia, communication technology, such as techniques, devices, protocols and/or standards used in the application. Similarly, basic communication techniques, protocols and standards, and those which are already covered in the unit materials of this unit should not be covered in details in the report. Multimedia communication technologies, protocols and standards to be covered in lectures include basic data compression techniques, JPEG, JPEG2000, MPEG1, MPEG2, MPEG4, H.261, H.263, RTP, RTCP, SIP, STP, SDP, and RSVP. Detailed materials in an assignment submission, which overlap lecture materials in general and the listed protocols in particular, may not be counted. However, detailed materials of these protocols and standards may be included in the report if these materials are not already covered in the lectures.
In summary, the report should at least cover the application part, the multimedia part of the application, and the communication part of the application. These three parts must belong to the same application area. There should be balance, in contents as well as in details, in the coverage of these three parts in the report.
The 3000 words are for the report contents only. Although the amount of words is small, words used in the front cover, table of contents, references, diagrams, and tables, etc., are not counted.
Students are expected to do their own literature research and any reference used must be quoted at the end of the whole report. A small amount of direct quoting of sentences and small paragraphs, properly quoted and referenced, from literatures may be used in the report to refer to other people's statements and to initiate discussions or descriptions in the report. However, the report should mostly be written by the student's own words, with reference to the

literatures if necessary. Too much direct quoting in the report will be penalized, in a sense that it will reduce the effective amount of the student's contributions to the report.
Please note that Turnitin, an originality checker, is to be used to report on the amount of written contribution from the student to the submitted report. A report must only be submitted for this unit only.

Tables and diagrams should be used to organize data, and should be drawn by the students. Direct copying of tables and figures from literatures may be ignored. Any sources of data must be referenced. References, tables and diagrams (properly captioned) should NOT be placed in the main body of the report. Instead they should be placed at the end of the report. Students should avoid simply listing a large number of points in point-format in the description part of the report. A list of points, which is effectively a table, may be marked as such.
Given the word limit of 3000 specified in the assignment, materials written too far beyond this word limit may not be marked.
More details about this assignment will be placed on vUWS for this unit during the Session.

Resources:

Library resources, especially relevant IEEE Transactions and Magazines via IEEE Xplore:
http://ieeexplore.ieee.org/Xplore/home.jsp

Marking Criteria:

Criteria	High Distinction	Distinction	Credit	Pass	Unsatisfactory
Introduction	Balanced and closely related introduction, good outline of objectives and structure 85% - 100%	Good balanced introduction, outline of objectives and structure of the report 75% - 84%	Appropriate balanced introduction, outline of some objectives and structure of the report 65% - 74%	Some introduction, outline of some objectives and structure of the report 50% - 64%	Superficial introduction. <50%
Main report body	A balanced covering of the three required areas with good breadth and depth 85% - 100%	A balanced covering of the three required areas with appropriate breadth and depth 75% - 84%	A balanced covering of the three required areas 65% - 74%	Mainly coverage two of the required areas only 50% - 64%	Mainly covering one of the required areas only <50%
Conclusion	Balanced introduction closely related to contents and closely mapping stated objectives from the introduction 85% - 100%	Good balanced conclusion derived from contents and mapping stated objectives from the introduction 75% - 84%	Appropriate balanced conclusion derived from contents, 65% - 74%	Some conclusion derived from contents 50% - 64%	Superficial conclusion. <50%
Literature research and references	Balanced and closely relevant, and appropriately quoted, from high-quality sources 85% - 100%	Appropriate balanced references from high- quality sources and quoted appropriately in the report 75% - 84%	Appropriate balanced references from appropriate sources and quoted appropriately in the report 65% - 74%	Some references on some areas, but lack of references in others, and not quoted in the report 50% - 64%	No list of references or some references from low-quality sources <50%
Use of diagrams and tables	Good-quality, balanced and closely relevant diagrams and tables 85% - 100%	Good-quality diagrams and tables used appropriately 75% - 84%	Adequate number of diagrams and tables used 65% - 74%	Some diagrams and table 50% - 64%	No diagrams and tables, or copied and pasted from sources <50%
Report format	Complying with the format specifications given in the Assignment 85% - 100%	Good formatting with minor omissions. 75% - 84%	Adequate formatting with some omissions and misplacements 65% - 74%	Adequate formatting with omissions and misplacements 50% - 64%	Minimal formatting effort <50%

Additional Information

Marking Guide

Report Items	Max Marks
Introduction	2
Main report body	22
Application	*8*
Multimedia	*7*
Communications	*7*
Conclusions	1.5
References	1
Diagrams and Tables	2
Report format	1.5
Total	30

The above table shows the guide on how marks are allocated to each of the report items. The marks shown are the maximum possible marks allocated. A total of 22 marks are allocated to the main body of the report. To obtain these marks, this part of the report must be closely relevant to the assignment specifications above.

The main body of the report, generally speaking, consists of three areas, i.e. application, multimedia and communication. The marks in italics in the above table show the maximum marks which can be obtained if only that area is described in the report. As mentioned before, these three parts must belong to the same application area. Marks will be deducted, substantially, if the three parts are not related to the same application.

Given the word limit of 3000 specified in the assignment, materials written too far beyond this word limit may not be marked.

Note that the report will be marked based on quantity as well as quality. The table Marking Criteria in the Learning Guide outlines the criteria with regard to the contents of each of the required components.

🗝 Annotated exemplar

In general, as far as the contents of the technical report are concerned, examples of technical reports in multimedia communication systems can be obtained from various technical magazines, transactions, and journals. These materials are widely available from the library especially via online access, for example, to the IEEE Xplore Digital Library: https://ieeexplore.ieee.org/Xplore/guesthome.jsp?reload=true Technical articles in the IEEE Communications Magazine are examples of technical reports in the postgraduate and professional levels in the areas of communications: https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=35

Specifically for the assignment, the technical report should have a one-page cover, showing the title of the report, the author (and the author's affiliation), and the year (and month) the report is written. For example, the following shows an example of the materials which should appear on the front page of a technical report. The font sizes of the above should be adjusted to suit their appearances on a single page:

An Overview of the IEEE 802.15 Standard

by

Hon Cheung
School of Computing, Engineering and Mathematics
Western Sydney University

February 2021

Following the front page of the technical report should be the table of contents. Examples of table of contents are available from most of the publications, e.g. technical articles, books, etc. A technical report should be properly sectioned. This is reflected also in the table of contents. The following lists a segment of an example table of contents:

Contents **Page**

Although double-column is widely used in articles published in technical magazines, for this assignment, it is not necessary to use double column and single-column must be used.

References used in the report should be listed in References. Any reference style specified in https://library.westernsydney.edu.au/main/guides/referencing-citation may be used or students may use the reference style used in IEEE publications. References should be quoted in the main body of the report. For example, if IEEE reference style is used, the reference is quoted [N] where N is the number given to the reference in the list of references.

Tables and diagrams should be used in a technical report. They should be suitably captioned and described in the main body of the report. There are different ways to caption a table or a diagram. Students may use any common method or use the method in IEEE publications, i.e. the caption is placed below the figure or table. The following shows an example.

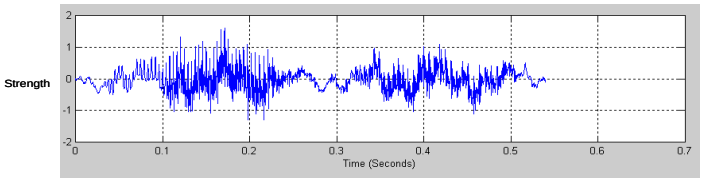

Figure 1. A typical speech signal in the time domain

The above examples illustrate some aspects of a technical report. These aspects have some impacts on the marks given to a report as far as marking is concerned as can be seen in the marking guide. However, as can also be seen in the marking guide, most of the marks are allocated to the main body of the report and as mentioned before, the main contents of the report are marked by their relevance to what is specified in the assignment.