

Education System in Myanmar

Brief Description of Primary, Secondary and Tertiary Education

1 Basic Education System

- 1.1 The current basic education system in Myanmar comprises six years of primary (Grade 1 to Grade 6), three years of lower secondary (Grade 7 to Grade 9) and two years of upper secondary (Grade 10 and Grade 11) education. There are currently 47,365 basic education schools in Myanmar with approximately 9.26 million students. The majority of these schools are managed by the Department of Basic Education under the Ministry of Education (MOE).
- 1.2 In addition, a significant percentage of students access basic education through monastic, private, community and ethnic education schools. The official commencement date for schools in Myanmar is 1st June every year. The number of schools, teachers and students in the basic education in the 2015-2016 Academic Year are listed in Table - 1 below.

Table - 1: Number of Schools, Teachers and Students in the 2015 - 2016 Academic Year.

S. No.	School Category	Number of Basic Education Schools (2016)	Number of Teachers	Number of Students
1	Upper Secondary	3,515	34,393	873,832
2	Lower Secondary	6,224	129,945	2795,607

3	Primary	35,650	158,176	5,184,041
4	Monastic	1,538	11,044	297,039
5	Private	438	7,397	107,451
	Total	47,365	340,955	9,257,970

2. **Preschool and Kindergarten**

2.1 Preschools are opened for children over 2 years and they are in extensive care or public systems. Kindergarten starts from the age of 5 (not younger than 4 Years and 8 months at the time of school's commencement date). Primary, Lower Secondary and Upper Secondary Schools in Myanmar are under the Department of Basic Education of the Ministry of Education.

3. **Primary Education**

3.1 Primary education is the first stage of basic education and, in principle, is compulsory. Primary education lasts five years, including one year of pre-school education (kindergarten); it is organized in two cycles: lower and upper primary. The admission age is 5+. It lasts six years and to proceed to the

secondary school, students must pass a comprehensive examination of basic subjects after Standard 4.

- 3.2 KG starts at the age of 5 and actual teaching - learning process already begins in KG.

4. **Secondary Education**

- 4.1 Secondary Schools are usually combined, comprising both middle and high schools. Secondary Middle Schools offer Standard 5 to Standard 8 (lower secondary level) whereas Secondary High Schools Standard 9 and Standard 10 (Matriculation) (upper secondary level).

- 4.2 The first phase of secondary education takes place at Middle Schools, where students pass through Standard 5 to Standard 8 before they take their Standard 8 examinations. In High Schools, all students have to take Myanmar, English and Mathematics as compulsory subjects. Arts students major in Geography, History and Economics, while science students major in Chemistry, Physics and Biology. At the end of the two-year high school period, i.e. end of

Standard 10 (Matriculation), students sit for their university entrance examinations (matriculation examinations) annually in March, administered by the Board of Examinations of the Ministry of Education.

- 4.3 Students who achieve distinctions in five or more subjects (or a combined total of approximately 500 / 600 marks) are generally guaranteed placement in one of technological and medical universities, the most selective of universities in Myanmar. Test scores are released at testing sites throughout the country in June since 2007.

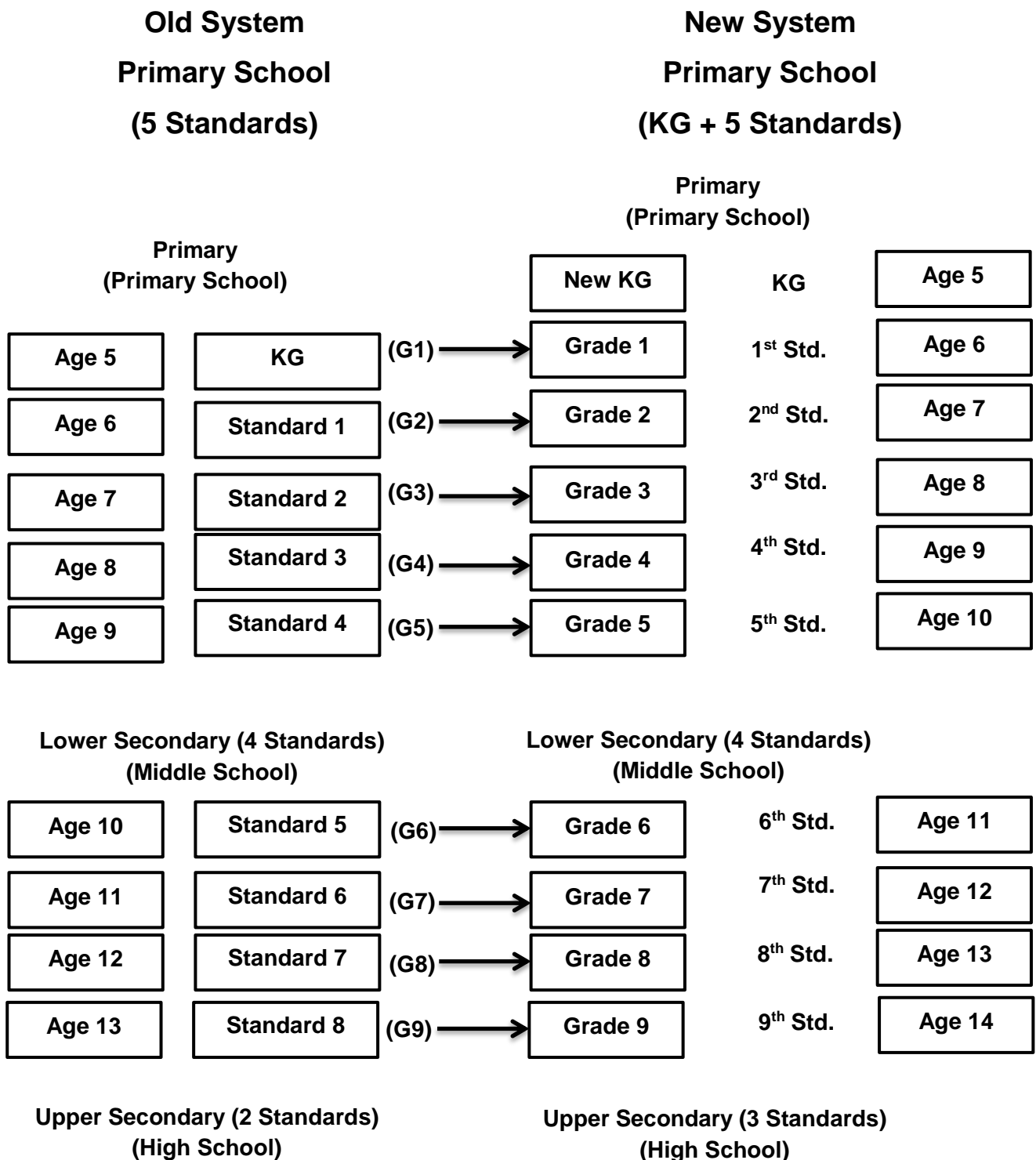
5. **New Basic Education in Myanmar**

- 5.1 In 1998, Kindergarten (KG) was designated as Grade 1 and since then KG has been not for singing and playing which is normally the case internationally, but the actual teaching and learning take place in KG. Former Standard 1 syllabus is taught in KG, even though the children are only 5 years old. It can be said that academic standard in Myanmar is one year ahead of the internationally accepted age norm.

5.2 It seems as if what is known as Standard 10 is academically about equivalent to international Grade 11, even though the age of Myanmar students are one year younger than their international cohorts.

5.3 The comparison of the Old and New Basic Education System is shown in the

Diagram below;



6. Tertiary Education

- 6.1 The Rangoon University Bill was enacted in 1920. In Tertiary Education System, after high school, a student had to attend for 2 years either Intermediate Arts (I.A.) or Intermediate Science (I.Sc.) course at the university, depending on the Arts or Science Subject Combination chosen by the student.
- 6.2 After I.A and I.Sc, Students could select to attend Arts and Science University or any other Professional Universities such as Technological University, Medical University, Economic University etc., according to their interest and marks attained in their I.A. and I.Sc. courses.
- 6.3 After I.Sc., those who wanted to become engineers could apply for engineering specialization at the Faculty of Engineering which required another 4 years to earn B.Sc. (Engg.) Degree.
- 6.4 Therefore, to get an engineering degree, it took 10 years in High School plus 2 years as I.Sc. student plus another 4 years as engineering student, totaling 16 schooling years.
- 6.5 That system was existed up to 1964, when so-called New Education System was introduced in Myanmar.
- 6.6 The government envisions higher education as an avenue for empowering people to make educated decisions and capitalize on economic opportunities

within Myanmar, and therefore, foresees investment in education investment for the people of Myanmar.

- 6.7 Universities in Myanmar remain highly centralized and state-run. Universities offer bachelor's degree programmes, master's degree programmes, and doctorate degree programmes. The higher education system follows a 4-1-3 year program with a 4 years for a bachelor's degree, one year for qualifying classes, and 3 years for a master's degree. This is true only for some kinds of institutions like Arts and Science Universities and University of Economics
- 6.8 However, some kinds of professional universities such as Technological Universities offer long Bachelor's Degree Programmes, lasting a minimum of 6 years for the first degree. It takes another 2-3 years for Master's Degree and another 3-5 years for Doctoral Degree at the Technological Universities.
- 6.9 Myanmar has 158 tertiary education institutions, colleges, degree colleges and universities, which are overseen by respective Ministries. The majority of students are studying fulltime in tertiary education under the management of the Ministry of Education, while some students are accessing higher education through Distance Education Universities. The universities are run by their respective Ministries. For example, Universities of Medicine are run by the Ministry of Health and Sports and Agricultural University is run by the Ministry of Agricultural, Livestock and Irrigation, etc.

7. Technical and Vocation Education

- 7.1 Assess to Technical and Vocation Education and Training (TVET) in Myanmar is provided by relevant Ministries and the private sector.
- 7.2 The Technical and Vocation Education and Trainings (TVETs) are mainly run by the Technical High Schools and Technical Institutes under the Ministry of Education.

8. Brief History of Engineering Education in Myanmar

- 8.1 Myanmar Engineering Education started as the Department of Engineering which was first established under Rangoon University in 1923 and the programme for B.Sc. (Engg.) degree in Civil Engineering was inaugurated in 1924.
- 8.2 In 1927, Burma Oil Company (B.O.C) donated B.O.C College of Mining Engineering in the University Estate and the formerly established Department of Engineering was moved to that place. Then in 1946, the Department of Engineering was upgraded to become the Faculty of Engineering, headed by the Dean of Engineering.
- 8.3 Myanmar gained independence from the United Kingdom in 1948 and the Department of Mechanical Engineering and the Department of Electrical Engineering were formed in 1951. At that time, there were Civil, Mechanical and Electrical Engineering Departments (3 Separate Engineering Departments) under the Faculty of Engineering of Rangoon (Yangon) University.

- 8.4 Two visiting professors from M.I.T (USA) were sent to provide necessary assistance to Myanmar under the Technical Cooperation Administration (TCA) Programme between USA and Myanmar. More lecturers from USA, UK and India came later.
- 8.5 IN 1952, some bright students were sent as scholars to several famous universities in USA, including M.I.T and some more students were trained in later years. They served as lecturers in the Engineering Departments in Myanmar after their study in USA. It has proved to be one of the most significant undertakings for the development of engineering education in Myanmar.
- 8.6 Between 1953 -1955, new Academic Departments, such as Mining Engineering Department in 1953, Chemical Engineering Department in 1954, Metallurgy Engineering Department and Architecture Department in 1954 and Textile Engineering Department in 1955 were opened respectively and there were altogether 8 Engineering Departments in B.O.C College by 1955.
- 8.7 In 1961, the magnificent new building was built and inaugurated in Rangoon (Yangon) by the name of "**Burma Institute of Technology (B.I.T)** and the Faculty of Engineering with all departments was moved to B.I.T from B.O.C College. Then in 1963, the name of B.I.T was changed to "**Rangoon Institute of Technology (R.I.T)**".
- 8.8 The new higher education system in Myanmar was introduced in 1964 and Professional Institutes were separated from Arts and Science University. So,

R.I.T became as an professional institute with the status of a full-fledged university. Direct 6-year Bachelor of Engineering (B. E.) and Bachelor of Architecture (B. Arch.) Programmes were initiated for the matriculates.

- 8.9 The Bachelor of Engineering (B. E.) Degree was first offered in 1965 under the new education system instead of the B. Sc. (Engg.) Degree offered under the old system. Then, Master of Engineering (M. E.) Courses were first opened only in 2 Departments (Civil Engineering and Chemical Engineering) in 1968 and also M.E. Courses in Mechanical, Electrical and Metallurgy Engineering were opened in 1970.
- 8.10 Accordingly, M.E. Courses in Mining, Petroleum and Textile Engineering were opened in 1996 and M. Arch. Course for Architectures was also opened in 1996.
- 8.11 Moreover, Post-graduate Diploma Courses were opened from 1973 with the first course in Chemical Engineering and then in Civil Engineering and Architecture.
- 8.12 The Ministry of Science and Technology (M.O.S.T) was formed in 1996 and all the Technological Universities, Technical Colleges, Technical Institutes and Technical High Schools were transferred to the Ministry of Science and Technology (M.O.S.T) from the Ministry of Education for about 20 years and then transferred back to the Ministry of Education in 2016.

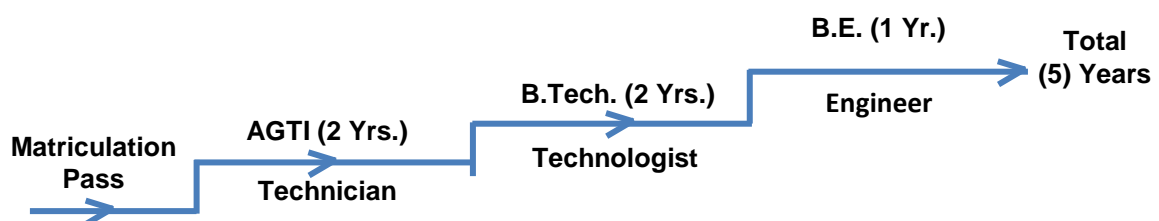
9. **Bridging Courses**

- 9.1 In 1967, the Bridging Courses were introduced for the students who got diploma from Government Technical Institutes (G.T.I) to attend at the Rangoon Institute of Technology (R.I.T) for Bachelor of Engineering (B. E.) Degree. The selection of such students was based on their scores in their final year examinations and also by the entrance examinations. The quantity of students accepted by R.I.T was limited by selection criteria.
- 9.2 The students who passed the entrance examinations started learning in R.I.T as third - year students and after passing the final year examination (sixth year examination), they became engineers with Bachelor of Engineering (B.E.) Degree.
- 9.3 Similarly, the top students who passed the final year examination of Government Technical High Schools (T.H.S) were allowed to attend engineering courses as first - year students if they passed the entrance examination of R.I.T from 1969.
- 9.4 At the same time, the top graduates in Industrial Chemistry who passed the entrance examination of R.I.T were also admitted as fourth – year Chemical Engineering Students.
- 9.5 The Bridging Courses were not opened regularly according to the requirement of the country and the availability of the Rangoon Institute of Technology (R.I.T).
10. **Three-Step Ladder-Like Engineering Education System**

- 10.1 Three-step ladder-like Engineering Education System was introduced in Myanmar in the year of 2000 as a new technical education system. The idea is to give 2 years of technician training (for Diploma), another 2 years of technologist education and training (for a degree in technology), followed by another one year of engineering education to those who wanted to earn an engineering degree. A student must have attended 3 kinds or levels of technical-related education and training to become all-round engineer.
- 10.2 In this system, the students who passed the matriculation examination with high scores were admitted by their scores at the Technological Universities, Government Technical Colleges and Government Technical Institutes in their respective Regions and States as first-year students.
- 10.3 After passing the two-year Technical Diploma Course, and if they were qualified, they were admitted to attend two-year Bachelor of Technology (B. Tech.) Courses at the Technological Universities in their respective Regions and States throughout the country. The students who passed the Bachelor of Technology (B. Tech.) Courses with the qualified marks were admitted for another one year for Bachelor of Engineering (B.E.) Courses at Technological Universities.
- 10.4 For Three-Step Ladder-Like Engineering System, the Government opened the Technological Universities in each and every Region and State throughout the country. But, by the limitation of academic staff, supporting staff, teaching aids and facilities, only some engineering courses were available which could

support the development of the industrial sector of the respective Regions and States. At the same time, Computer Universities were opened at various Regions and States where Technological Universities were located.

10.5 The Three-Step Ladder-Like Engineering Education System, formerly used in Myanmar took five years and it can be seen in the diagram as below ;



11. Technological Universities, Technical Colleges, Technical Institutes, Technical High Schools and Computer Universities

For the development of various Regions and States, the Government already opened the following Technological Universities, Technical Colleges, Technical Institutes, Technical High Schools and Computer Universities up to 2017 ;

- | | | | |
|-----|---|---|---------|
| (a) | Technological University (T.U.) | - | 33 Nos. |
| (b) | Computer University (C. U.) | - | 25 Nos. |
| (c) | Myanmar Aerospace Engineering University (M.A.E.U.) | - | 1 No. |
| (d) | Myanmar Maritime University (M.M.U.) | - | 1 No. |
| (e) | Defence Services Technological Academy (D.S.T.A.) | - | 1 No. |
| (f) | Government Technical College | - | 3 Nos. |

- (g) Government Technical Institute - 22 Nos.
- (h) Government Technical High School - 34 Nos.

12. **Academic Engineering Courses**

12.1 The Academic Engineering Courses (6-year programme), started from 2012 in the Technological Universities are as stated below ;

- (a) Civil Engineering .
- (b) Mechanical Engineering .
- (c) Electrical Power Engineering .
- (d) Electronic Engineering .
- (e) Computer Engineering and Information Technology .
- (f) Mechatronic Engineering .
- (g) Chemical Engineering .
- (h) Textile Engineering .
- (i) Mining Engineering .
- (j) Petroleum Engineering .
- (k) Metallurgical Engineering and Materials Science.
- (l) Architecture.

12.2 The Supporting Subjects for Engineers are also stated below ;

- (a) Engineering Physics .
- (b) Engineering Chemistry .
- (c) Engineering Mathematics .
- (d) Engineering Geology .

- (e) English .
- (f) Myanmar .

12.3 Some Technological Universities are not offering all the Academic Engineering Courses as stated above, but offering some Academic Engineering Courses required for the development of the industrial sector in respective Regions and States of the country.

13. **Opening New Chapter of Engineering Education in Myanmar**

13.1 In 2012, the new chapter of engineering education was opened in Myanmar. This was also the turning point for the engineering education in Myanmar. Yangon Technological University (Y.T.U.) and Mandalay Technological University (M.T.U.) opened the 6-year Bachelor of Engineering (B. E.) and Bachelor of Architecture (B. Arch.) programmes on 3 December 2012 as the Centres of Excellence (COEs) in Myanmar.

13.2 The entry mark of Y.T.U and M.T.U has been the highest among all Universities in the country up to now, based on total marks of students scored in National Matriculation Examination.

14. **Vision of Y.T.U and M.T.U**

It is envisaged that Y.T.U and M.T.U will become the highly-prestigious Technological Centres of Excellence (COEs) in teaching and research with the strong commitment to systematically educate and train students of higher calibre to become well-rounded, highly-qualified engineers and specialist with the ability to solve complex engineering problems and researchers who can discover and innovate new things, all for the good of society, people and the environment.

15. **Mission of Y.T.U and M.T.U**

15.1 The Mission of Y.T.U and M.T.U is to educate and train students systematically to become qualified engineers, specialists and researchers who can effectively contribute to the building of a modern, developed nation with high standard of engineering education and training.

15.2 The students can think rationally approach and solve complex engineering problems systematically. They also have will and ability to work for the good of the society, people and the environment and they also are conscious of civic duties and professional ethics.

16. **Quality Policy of Y.T.U and M.T.U**

The policy of Y.T.U and M.T.U (COEs) is to ensure the Quality Management System (QMS) that is vital to the management process and to thereby ensure that each part of functioning meets the customer's requirements by improving the effectiveness of the quality system continuously.

17. **Course Duration of Y.T.U and M.T.U**

The duration of programmes in Y.T.U and M.T.U is as follows ;

- (a) Bachelor's Degree Programmes - 6 years after High School.
- (b) Post-graduate Diploma Programmes - 1 year after Bachelor's Degree
- (c) Master's Degree Programmes - 2 years after Bachelor's Degree or 1 year after Post-graduate Diploma.
- (d) Ph.D. Degree Programmes - Minimum 3 years after Master's Degree.

18. **Quality Assurance of COEs**

- 18.1 In Y.T.U and M.T.U (COEs), Good Leadership, Good Governance and Effective Quality Management System (QMS) are in place and Quality Teaching and Research Excellence are the targets to be achieved.
- 18.2 For quality teaching, sufficient number of qualified and experienced academic staff, modern and appropriate curricula with a proper percentage of laboratory and project work, industrial training and internship programme, acceptable student - teacher ratio, adequate laboratory facilities and teaching aids, library facilities, conducive teaching - learning environment, effective teaching methodology, effective examination system and assessment methods are the key elements of requirements for COEs.
- 18.3 For research excellence, dispatch of sufficient academic staff abroad for Ph.D. Degree, Post-doctoral research training, procurement of advanced equipment for research, getting adequate funds for research, provision of facilities for high-quality researchers, formation of research clusters and units in various research areas for multi - discipline research, holding of international research symposiums and conferences, joint - research with foreign universities and organizations, appointing prominent foreign and local Professors and Researchers and creating research environment are the key measures to be taken by COEs.

19. **Education Pathway of Technological Universities**

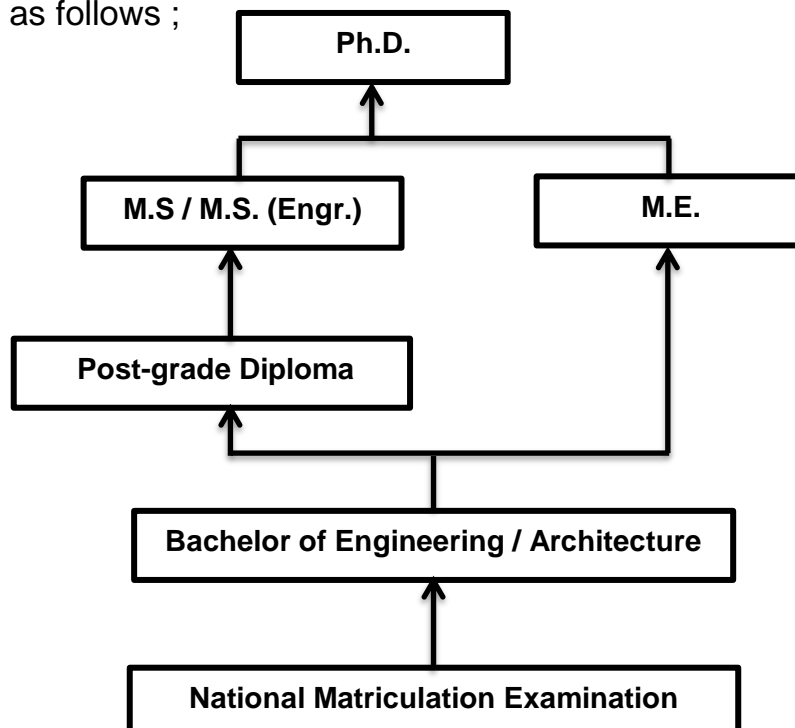
- 19.1 The students who passed the National Matriculation Examination with the qualified marks for entering Technological Universities in Myanmar can join 6 - year Bachelor of Engineering or Architecture Degree Courses.

19.2 After passing 6 - year Bachelor Engineering Courses and if qualified, the students can apply Post - graduate Diploma Course (1 - year) or Master of Engineering (M.E.) Course (2 to 3 years).

19.3 A student who passed Post-graduate Diploma Course can apply Master of Engineering (M.E.) Course or Master of Science (M.S.) Course or Master of Science (Engineering) (M.S. Engr.) Course for another one year.

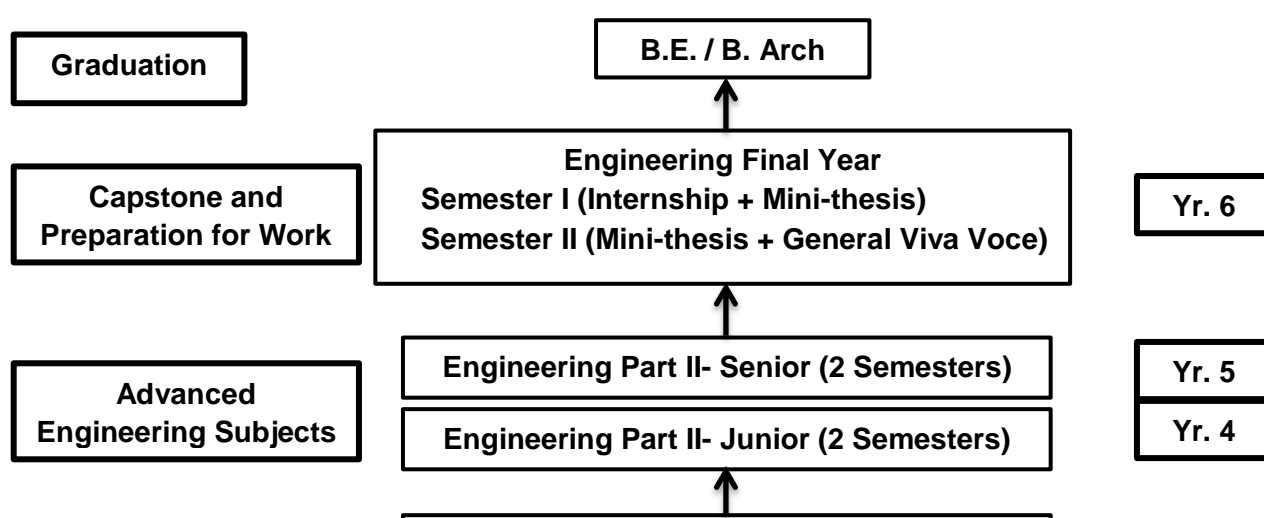
19.4 After passing Master of Engineering (M.E.) Course or Master of Science (M.S.) Course or Master of Science (Engineering) (M.S. Engr.) Course and if qualified, he / she can join Ph.D. Course for another 3 to 5 years.

19.5 The Block Diagram of Education Pathway of Technological Universities can be shown as follows ;



20. Pathway of Undergraduate Programmes in Technological Universities

- 20.1 The students who passed the National Matriculation Examination with the qualified marks to enter the Technological Universities throughout the country need to attend Pre-Engineering Courses in year-1 (2 semesters). After passing Pre-Engineering Courses in the first year, the students will have to attend and pass Engineering Part-1 (Junior) Courses in year-2 (2 semesters) and Engineering Part-1 (Senior) Courses in year-3 (2 semesters) as the Engineering Fundamentals.
- 20.2 After passing the examinations of Engineering Part-1 (Junior) and Engineering Part-1 (Senior) Courses, the students will have to attend Engineering Part - 2 (Junior) Courses for one year in year - 4 (2 semesters) and after passing the Engineering Part - 2 (Junior) examination, the students will have to attend Engineering Part - 2 (Senior) Courses for one year in year - 5 (2 semesters). The Courses to be learned in year - 4 and year - 5 are the Advanced Engineering Subjects.
- 20.3 After passing the examinations of Engineering Part - 2 (Senior) in year - 5, the students need to attend Engineering Final Year Courses for one year in year-6 with Internship and Mini-thesis programmes in Semester - 1 and Mini-thesis plus General Viva Voce in semester - 2 as Capstone and Preparation for Work Programmes. After passing the Final Year (year-6) examinations, the Bachelor of Engineering (B.E) Degree and Bachelor of Architecture (B. Arch.) Degree will be offered to the respective students.
- 20.4 The Block Diagram of the Pathway of Undergraduate Programmes in Technological Universities can be shown as follows ;



(National Matriculation Examination Pass)

21. Under-graduate Academic Curriculum of Technological Universities in Myanmar

In the Technological Universities, particularly in COEs, the followings are included in the Under-graduate Academic Curriculum ;

- (a) 2-semesters per academic year.
- (b) 15 weeks of active teaching – learning per semester (not including 1 week private study and 2 weeks examination).
- (c) The engineering curriculum includes ;
 - (1) Lectures on natural and mathematical science, computer science, engineering principles, complex engineering analysis

and design, professional engineering practice, humanities, social science and management.

- (2) Tutorial Classes.
- (3) Laboratory Works.
- (4) Assignments.
- (5) Project Works.
- (6) Graduation Project (or) Mini-thesis
(Final year – First Semester).
- (7) Industrial Training (4 weeks in vacation times from year – 2 to year-5).
- (8) Internship (Final year first semester).
- (9) Mini-thesis (Final year first and second semesters).
- (10) General Viva Voce (Final year second semester).

22. Future Engineering Education System in Myanmar

22.1 The KG + 12 Education System has been introduced in Myanmar since 2016 in Basic Education System and by 2023 when the first batch of students who are nurtured under the programme of KG + 12 Basic Education System, the existing 6 – year Bachelor of Engineering (B.E.) and Bachelor of Architecture (B. Arch.) programmes will have to be adjusted accordingly and reasonably to be in line with the International Standards of (12 +4) System.

22.2 We must learn the international guidelines, practices and trends and make ourselves ready by actually practicing new system to be able to smoothly manage the transition which will inevitably encounter in near future.