# UTM FUTURE ORIENTED CURRICULUM FRAMEWORK FOR UNDERGRADUATES CURRICULUM REVIEW 2023

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#### 1.0 INTRODUCTION

A future-oriented curriculum framework typically focuses on developing competencies that are considered essential for success in the 21st century. These competencies may include critical thinking and problem solving, creativity and innovation, collaboration and teamwork, communication, digital literacy, and global citizenship.

The focus is less on specific content knowledge and more on the development of these essential competencies. This approach recognizes that the specific knowledge and skills that students will need in the future may be different from those that are currently in demand, and that students will need to be adaptable and flexible in order to succeed

A future-oriented curriculum framework emphasize the importance of interdisciplinary learning, as well as the integration of emerging technologies and global perspectives. It may also prioritize experiential and project-based learning, as these approaches are seen as particularly effective in developing the competencies that are essential for success in the future

By taking consideration the needs of future-oriented curriculum, UTM committed to develop a future-oriented curriculum framework that intended to provide students with a strong foundation for lifelong learning, and to prepare them for the challenges and opportunities of an increasingly complex and interconnected world.

#### 2.0 CURRENT UNDERGRADUATE CURRICULUM

The curriculum in Malaysia faces several challenges, including a lack of convergence and interdisciplinary approach, resulting in outdated content and a curriculum that is not industry-driven, inflexible, and with insufficient involvement of industry. Addressing these challenges requires a concerted effort to redesign the curriculum, incorporating interdisciplinary elements to promote convergence and better prepare students for the demands of the workforce, creating greater flexibility to adapt to changing needs, optimizing industry involvement to provide real-world experience and insights, and fostering a dynamic learning environment that encourages innovation and creativity.

#### 3.0 DEFINITION OF FUTURE ORIENTED CURRICULUM

The future oriented curriculum is an educational program that provides students with future skills and knowledge to fulfill the needs of complex, dynamic and flexible future job opportunities and challenges.

#### 4.0 CONCEPTS OF FUTURE ORIENTED CURRICULUM

#### 4.1 Flexible

A flexible curriculum is a future-focused educational approach that prioritizes agility, resilience, organicity, convergence, and openness to provide students with multiple paths for personal and professional growth. By embracing emerging technologies and evolving industries, a flexible curriculum can help prepare students for the demands of a rapidly changing world. Through a flexible curriculum, students have the opportunity to develop their professionalism through specialized courses and internships, become scholars in their chosen fields through research and academic pursuits, pursue business interests through entrepreneurship and leadership development, or explore personal interests and hobbies to foster creativity and personal flexibility. This dynamic approach to learning allows for continual evolution and adaptation, ensuring that students are equipped with the skills and knowledge needed to succeed in a constantly shifting job market. As the future of work becomes increasingly complex, a flexible curriculum provides students with the tools and resources needed to create their own paths for success, and to thrive in an ever-changing world.

#### 4.2 Indsutry Driven

An industry-driven curriculum focuses on providing students with the skills and knowledge necessary to thrive in the current job market, with a strong emphasis on entrepreneurship and innovation to encourage students to develop their own ideas and solutions to real-world problems. Collaboration between industry and universities is essential for the success of such a curriculum, as it allows industries to provide universities with valuable insights into the current and future needs of the job market. By working together, universities can ensure that their curriculum remains up-to-date and relevant to the needs of the industry, producing graduates who are equipped with the skills and knowledge to drive innovation, create new solutions, and to adapt the market dynamics through lifelong learning.

#### 5.0 OBJECTIVES OF FUTURE ORIENTED CURRICULUM

- 5.1 To provide education and resources that can help to produce futureoriented, high-quality graduates able to innovating solutions and excel in their chosen fields.
- 5.2 To prepare students for the future job market by providing them with relevant skills & knowledge through Teaching Research Nexus.
- 5.3 To provide options for flexible learning, such as online or blended learning, to cater the needs and preferences of different learners.

#### 6.0 PRINCIPLES OF FUTURE ORIENTED CURRICULUM

No	Principle	Explanation
1.	Fluid And Organic	A curriculum with a naturally developing
	Curriculum Content:	flexible structure does not require a systematic
	- Interdisciplinary and	and structured approach. It can be rearranged
	Multi-disciplinary	(updated and formed when necessary) to
	learning	respond to changes in industry needs and
		student's educational experiences.
	- Flexible Structure	The curriculum takes into account student's
		abilities to choose from various course options
		and allows them to customize their
		educational path based on their interests and
		needs.
2.	Teaching-Research NEXUS	The Teaching-Research NEXUS refers to the relationship between teaching and research in
		higher education institutions. It is a concept
		that emphasizes the interdependence of
		teaching and research, and how both activities
		can compliment and enhance each other.
		Through this concept, it can create a culture of
		intellectual curiosity and inquiry that benefits
		both faculty and students. Faculty members
		are able to engage in research that is relevant
		to their teaching, while also using their
		teaching experiences to refine their research
1		questions and methodologies. Meanwhile,

6.1 The principles of the future-oriented curriculum are as follows:

		students are able to benefit from the expertise of faculty members who are actively engaged in cutting-edge research and emphasize the competency skilss. The Teaching-Research NEXUS facilitates the transfer of knowledge and innovative teaching
		practices form research to TVET institutions, thereby contributing to the improvement of TVET quality and relevance.
3.	Emerging Technology	Refering to the latest technologies that potentially can affect the way we live, work and interact. This technology is usually studied by researchers, scientist and engineers to develop, improve the performance, safety and usability of technology.
		Examples of emerging technologies include artificial intelligence, blockchain, the Internet of Things (IoT), 5G, and robotics. These technologies are expected to have a significant impact on many aspects of life, including health, transportation, industry, education, and others.
4.	Collaboration between Industry, Community and Academia	The implementation of curriculum that require the involves the integrated participation of industry, community and academia in designing the curriculum, assessment, teaching and learning.
5.	HyFlex - Hybrid and Flexible Learning	Hyflex (Hybrid-Flexible) refers to hybrid learning that gives student the option to attend face to face or online at each learning session. In HyFlex learning, students can attend in- person in the classroom or attend online via online learning platform.
6.	Diversity, Inclusion and Personalised Learning	The learning process aimed at enhancing understanding and appreciation of individual and cultural diversity, as well as promoting inclusivity in our workplaces, communities and

		overall lives. Learning about diversity and inclusivity typically involves learning about individual differences such as culture, ethnicity, gender, age, religion and learning ways to promote engagement and respect in a diverse environment. The main goal of diversity and inclusion environment and ensure that everyone is respected and valued in the workplace or community.
7.	Humanistic and well-being	It is a learning approach that prioritizes the holistic development of students, which not only focused on academic achievement but also focused on self-development, emotional intelligence, and overall well-being. It aims to create a positive learning development that supports the development of self-awareness, self-appreciation, and personal goals. There are four main principles which are: i. Autonomy to choose. ii. Positive emotions to achive the best iii. Internal motivation to be the best. iv. Seeing human as the best creation Curriculum that is oriented towards humanity and well-being focuses on physical, mental, and emotional well-being. This approach empowers students to be "well-rounded" which could lead their lives, contribute to the community and excellence in all aspects of life which in line with UTM's slogan "In the Name of God for Mankind".

#### 7.0 FUTURE ORIENTED GRADUATE ATTRIBUTES

- 7.1 Definition
  - 7.1.1 "Future Oriented High-Quality Graduates" is defined as competitive graduates leading the forefront of science and technology and oriented towards the innovative solutions in good manners.
  - 7.1.2 "Graduate attributes" are defined as the values, knowledge and competencies acquired by students through their experiences and learning at university.

#### 7.2 Attributes

7.2.1 Six (6) attributes of graduates have been proposed as follows:

No.	Graduate Attributes	Details explanation
1.	Adab (Manner)	Graduates are able to integrate mind, qalb
		(heart or inner self) and practices towards
		building a character of integrity, synergy,
		excellence and sustainability (ISES).
2.	Innovative Talents	Graduates are able to strive for creative,
		innovative, problem solving, practical,
		pragmatic, cost efficient and sustainable
		solutions.
3.	Constructive Citizen	Graduates are able to contribute for a
		betterment of mankind, society, environment
		and nation in a developmental and patriotic
		manner.
4.	Enterprising skills	Graduates are resourceful and able to initiate
		and adapt to new ideas in innovative
		approach of achieving desired results.
5.	Scholars	Graduates have mastery of knowledge and
		understanding in their subject areas and
		possess independent and collaborative
		inquiry skills, rigorous in their analysis,
		critique, and reflection, and are able to
		innovate.
6.	Social Intelligence	Graduates have the capability to
		communicate, interact, and navigate
		effectively while being aware of diverse

	perspectives	and	possessing	inspirational
	leadership qu	alities		

7.2.2 The proposed subcomponents and terms of graduate attributes are as follows:

No.	Graduate Attributes	Subcomponents		Terms
1.	Adab (Manner)	<ul> <li>Trustworthy</li> </ul>	•	Personal and
		<ul> <li>Sistematik</li> </ul>		professional
		Ethical		identity
		Humility		
		• In the Name of God for		
		Mankind		
2.	Innovative Talents	<ul> <li>Digital capability</li> </ul>	•	Critical thinking
		<ul> <li>Thinking skills</li> </ul>		and problem
		<ul> <li>Conceptual skills</li> </ul>		solving
		Creativity	•	Digital literacy
3.	Constructive Citizen	<ul> <li>Global citizen</li> </ul>	•	Cultural
		<ul> <li>Sustainability</li> </ul>		competence
		<ul> <li>Inclusiveness</li> </ul>		
		Holistic		
		Balance		
		<ul> <li>Patriotism</li> </ul>		
4.	Enterprising skills	<ul> <li>Entrepreneurship</li> </ul>	•	Communication
		<ul> <li>Technopreneur</li> </ul>		and
		<ul> <li>Creating opportunity</li> </ul>		collaboration
		Resilience		
5.	Scholars	• Mastering of	•	Knowledge and
		knowledge		expertise
		<ul> <li>Resourceful</li> </ul>		
		<ul> <li>Lifelong learning</li> </ul>		
6.	Social Intelligence	<ul> <li>Adaptability</li> </ul>	•	Learning and
		Leadership and		development
		teamworking skills	•	Social
		• Agile		responsibility
		Alertness/ Awareness		and
		Communication skills		engagement

	• Volunteerism/	Soft	•	Leadership	and
	skills			professiona	lism

## 7.2.3 The framework as per below:



7.3 Mapping with Malaysian Qualification Framework 2.0

MQR Framework 2.0	Future Oriented Curriculum Framework (UTM)			
Knowledge & understanding	Scholars			
Cognitive Skills	Innovative Talents			
Practical Skills	Innovative Talents			
Interpersonal Skills	Social Intelligence			
Communication Skills	Constructive Citizen			
Digital & Numerical Skills	Scholars			
Numeracy Skills	Scholars			
Leadership, Autonomy &	Social Intelligence			
Responsibility	Constructive Citizen			
Personal Skills	Enterprising Skills			
Entrepreneurial Skills	Enterprising Skills			
Ethics & Professionalism Skills	Adab			

#### 8.0 THE FUTURE ORIENTED CURRICULUM FRAMEWORK

- 8.1 The structure of the future oriented curriculum framework are as follows:
  - 8.1.1 It emphasizes the development of critical thinking, problem solving, creativity, analytical, communication, collaboration, negotiation, resilience skills as well as an understanding of the latest developing technologies and their impact on society.
  - 8.1.2 The curriculum content is relevant to student's lives and their world, encompassing topics of sustainability, global citizenship, ethical decision masing based on data and IR4.0 technological skills.
  - 8.1.3 Agile, resilient, organic, convergent in terms of disciplinary fields, innovative, contemporary and focusing on IR4.0 technology skills and competencies to prepare students for a rapidly changing future world.
  - 8.1.4 The curriculum structure is also integrated, micro-sized or "chunk" to provide students with specific competencies. It is personal and not based on a conventional course structure (course-less based curriculum).
  - 8.1.5 The curriculum content also incorporates community elements to prepare students with Society 5.0 Elements.
  - 8.1.6 It heavily involves experiential and competency-based learning concepts. The future-oriented curriculum does not only involves the transformation of content, but it also requires a transformation of delivery methods that involve immersive learning, 21<sup>st</sup> century pedagogy, futuristic learning spaces, flexible learning times and industry-based locations, online learning, ODL, virtue, blended and HyFlex learning.
  - 8.1.7 The future-oriented curriculum also involves contemporary, personal, authentic, integrated, challenging and individual development based on assessment methods.
  - 8.1.8 The future-oriented curriculum plays a role in helping students to develop the necessary skills and knowledge and fostering a spirit values, and a love for lifelong learning to ensure the development of critical thinking for success in the future.

#### 8.2 The proposed framework as per below diagram:



#### UTM UNDERGRADUATE FUTURE ORIENTED CURRICULUM FRAMEWORK FLEXIBLE & INDUSTRY DRIVEN

6.5 Example of Future Oriented Curriculum Structure	8.3	Example of Future Oriented Curriculum Structure:
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Year	Year 1	Year 2	Year 3	Year 4			FO	C Elemen	ts		
Focus	Fundamental Knowledge	Fundamental & Applied Knowledge	Applied Knowledge & Experiential Learning	EXPERIENTIAL LEARNING	FLOC/ FLEX	TRN	ET	ICA	HF	PL	нw
Structure	Core Courses & General Courses	Core Course, General Courses & Free Elective Courses	General Courses, Program Elective Courses & Free Elective Courses	WBL, IDEAL, REAL, PRISMS, PSM, LI, Online, Home-based Learning etc.	/	/		/		/	/
Content	Contemporary	Contemporary Focus & Technology Integration	Contemporary Focus & Technology Integration	Technology Integration & Industry Focus, Entrepreneur Thinking		/	/				
Delivery	BL and/or Innovative Pedagogy	BL and/or Innovative Pedagogy	Innovative Pedagogy + HyFlex MOOCs, MC	Industry, HyFlex, Home-based Learning			/	/	/		
Assessment	( and/or Al	CONVENTIONAL (50-8 TERNATIVE ASSESSM	0%) ENT (20-50%)	ALTERNATIVE ASSESSMENT – Industry		/		/		/	/

\* Example of Future Oriented Curriculum Structure by Programs in the Appendix

#### 9.0 FLEXIBLE LEARNING

9.1 Flexible Learning is learner-centered learning in which choice is given in terms of pace, place, mode, and needs. Flexible learning is concerned primarily with facilitating the individual learning process. The goal is to provide quality learning experience through consideration of the learner's personal characteristics, learning styles, work responsibilities, learning needs and desires, and personal circumstances. Flexible learning empowers learners and offers them a choice in how, what, where, and when they learn. This requires a balance between the needs of institutions and learners that is economically sustainable and manageable by both.

Dimensions	Enablers	Elements	Operational			
			Definition			
Institutional Agility	Institutional	Recruitment &	Diverse entry			
Institutional agility	Governance	Admission	pathways to			
in higher education	Structures,		education system (eg:			
refers to an	relationship and		APEL A, APEL M,			
organization's	processes through		Green Lane:			
ability to adapt to	which, at both,		Sportsmen etc.)			
changes in the	national and					
higher education	institutional levels,	Academic	Academic rules and			
landscape and	policies for tertiary	Policy	regulations that			
respond to the	education are		promote flexible			
evolving needs of	developed,		learning by providing			
students, faculty,	implemented and		resources for faculty			
and the broader	reviewed (OECD,		to design and deliver			
community. It	2008, p.68)		high-quality online			
involves the			and hybrid courses.			
development and			These policies are			
implementation of			used to establish			
flexible policies,			guidelines for			
regulations,			ensuring that all			
processes, and			courses meet the			
practices that			same academic			
enable institutions			standards, regardless			
to quickly respond			of the mode of			
to changing			delivery. Policies that			
circumstances,			incentivize or require			

#### 9.2 The flexible learning approach:

emerging trends,		faculty to participate
and new		in professional
opportunities.		development related
		to flexible learning
		will also encourage
		the adoption of best
		practices and
		continuous
		improvement
	Credit & Award	Recognition of diverse
	Svstem	credit transfer
	,	mechanism (eg: APEL.
		MOOCs. or stackable
		credential) to award
		learners.
		The credit and award
		system in flexible
		learning narticularly
		in MOOCs APEL or
		stackable credentials
		focuses on
		recognizing and
		rowarding students
		for their
		achiovomonts and
		contributions in
		contributions in
		learning
		environments.
	Clobal	Clobal recognition in
	Bocognition	highor oducation with
	Necognition	respect to flowible
		learning is important
		for oncuring thet
		students have access
		success
		io nign-quality
		educational programs
		tnat meet
		international

			standards. Crowd
			accreditation can be a
			useful tool for
			evaluating the quality
			of flexible learning
			programs through
			community validation
			and peer review.
			Professional bodies
			accreditation and
			international
			recognition can also
			provide valuable
			endorsements of the
			quality and rigor of
			flexible learning
			programs, helping to
			enhance their
			reputation and appeal
			to students around
			the world.
			(eg:Self accredited,
			crowd accreditation,
			professional bodies
			accreditation and
			international
			recognition)
Personal Flexibility	Technology-	Digital	A learner's digital
Personal flexibility	Enhanced Learning	Learning	competencies to self-
in learning at	Using technologies		regulate learning
refers to an	to support learning		using digital tools (eg:
individual's ability	whether the		Augmented and
to adapt their	learning is local		Virtual Reality, e-
learning strategies,	(i.e., on campus) or		learning). Learning
preferences, and	remote (at home or		tacilitated by
goals to meet the	in the workplace)		technology that gives
of their educational	(Sen & Leong,		learners some
experience	2019)		element of control
			over time, place and
			pace.

		Leavelin	Disital
		Learning	Digital learning
		Spaces	environment (eg:
			Hybrid learning space,
			Next-Gen Learning
			Spaces, Makerspace)
		Artificial	Learners learn in a
		Intelligence	learning environment
		based Learning	that promotes
			adaptive assessment,
			intelligent tutoring
			system, personalized
			learning experience.
		Digital Content	Digital learning
			materials (eg. MOOC
			MC Open Educational
			Resources. Self-
			instructional
			materials Virtual
			lahs)
Negotiations	Pedagogical	Future	Outcome based
Negotiations for	Annroaches	Oriented	education that is fluid
flexible learning	The method and	Curricular	organic and suit to
between learners	practicos of a	Curricular	the needs of the
and higher	teacher in terms of		diverse background of
education	bow they approach		loarnors
institutions involve	their teaching		Learner as an active
the process of	style relates to the		Learner as an active
finding common	different theories	Dalias	participant and
reaching mutually	they use give	Delivery	designer of learning
beneficial	they use, give		process while
agreements that	reedback, and the		Instructors as the
allow for	assessments they		mediator and
personalized and	set		facilitator of learning
adaptable learning			(eg: Hybrid learning,
experiences.			Online Learning,
			Blended Learning,
			Active learning,
			Cooperative
			learning,High Impact
			Educational Practices
			(HIEPs))- NALI

		Contemporary	Interdisciplinary	
		Assessment	approach to	
			assessment based on	
			combining,	
			interpreting and	
			communicating	
			knowledge from	
			diverse scientific	
			disciplines (eg.	
			Authentic,	
			personalised,	
			alternative	
			assessment)	
Accessibility	Inclusive	Equity	Provide the right to a	
Accessibility in	Education		fair and inclusive	
higher education	Inclusive systems		education that	
with respect to	that value the		ensures access to a	
equity, inclusivity,	unique		high-quality	
and diversity	contributions		education and	
means ensuring	students of all		provide	
that all individuals	backgrounds bring		opportunities,	
have equal access	to the classroom		personalized learning,	
and opportunity to	and allow diverse		personal and social	
participate in	groups to grow side		development.	
higher education	by side, to the	Diversity	Opportunity for	
regardless of their	benefit of all		various demography,	
background,	(UNICEF <i>,</i> 2019)		racial, ethnics, socio-	
circumstances, or			economy, cultural,	
abilities			interest, experience,	
			and special needs	
		Lifelong	Opportunity for	
		Learning	continuous	
			education, self-paced,	
			self-directed, and	
			self-motivated in	
			acquiring knowledge,	
			skills and	
			competencies for	
			personal and	
			professional growth.	

	Globalisation	Promoting borderless	
		opportunity	to
		education	for
		intercultural	
		exchanges.	

#### 9.3 The proposed farmework as per below diagram:



#### **10.0 STUDENT ENGANGEMENT & EXPERIENCES**

- 10.1 Student engagement and experiences are critical aspects of campus life that can have a significant impact on student attitude beahivour, adab (manner), success and well-being.
- 10.2 Student engagement refers to the level of involvement and participation of students in various aspects of campus life, such as academics, research, extracurricular activities, and social events. Student experiences, on the other hand, refer to the quality of these experiences and the impact they have on students' personal and academic growth.
- 10.4 The phase of development of student engagement & experiences are in the first and second year of studies while the phase of advancement of student engagement & experiences are in the third and fourth year of studies. University may offer a variety of extracurricular activities and clubs that cater to a diverse range of interests, or provide opportunities for students to participate in research or service projects.

- 10.5 We believe students who are engaged and have positive experiences on campus are more likely to develop strong social networks and feel a sense of belonging and innovating solutions to the community.
- 10.6 Promoting student engagement and positive experiences on campus is essential for fostering a sense of community and belonging among students, as well as supporting their academic and personal growth.

#### 11.0 LIFE-LONG LEARNING

- 11.1 Lifelong learning refers to the ongoing process of acquiring knowledge and skills throughout one's life, often beyond formal education. It involves a continous pursuit of learning and personal development, with the goal of staying relevant and adaptable in a rapidly changing world.
- 11.2 Continuing education through higher degree program is an excellent way for individuals to engage in life-long learning and to advance their career and personal development.
- 11.3 Life-long learning also involves the profesional development through flexible offer by university towards certifications such as attending conferences and workshops, participating in online learning platforms, reading books and articles, and seeking out for mentorship and apprenticeship opportunities.

#### **12.0 PREMIUM EMPLOYMENT**

- 12.1 Premium employment refers to high-quality, desirable job positions that offer competitive salaries, benefits, and career growth opportunities. These jobs usually require specialized skills, expertise, and experience, and are often associated with prestigious companies, industries, or roles.
- 12.2 The basic knowledge needed to achieve premium employment are: Industrial/governmental knowledge
  - 4.2.1 Business Knowledge/ Entrepreneurial Thinking/ Project Management
  - 4.2.2 Subject Specific and Practical Knowledge + Data Analysis
  - 4.2.3 Cultural/ Contextual Knowledge
- 12.3 Values and skills needed to achieve premium employment are:
  - 4.3.1 Strong Leadership and Management Skills
  - 4.3.2 Digital, Technological and Technical Expertise
  - 4.3.3 Great Communication and Interpersonal Skills
  - 4.3.4 Strategic Thinker and Creative + Critical Problem Solver
  - 4.3.5 Strong Work Ethics, Commitment and Resilience

12.4 The proposed premium employment framework as per below diagram:



#### **13.0 TECHNOPRENEUR**

- 13.1 A technopreneur is an entrepreneur who uses technology to manage, develop, and grow their business. They combine technological efficiency with business skilss to create or develop innovative and efficient products or services for the purpose of increasing income and socio-economic growth.
- 13.2 The principles of technopreneurship encompass three (3) things:
  - 5.2.1 Technology: Utilizing the latest technology to develop products or
    - 5.2.2 Innovation:

Thinking creatively and innovating in intorducing new products or services that have added value.

5.2.3 Business:

Having strong business skills in managing the business and effectively marketing the products or services produced.

#### 13.3 Taxonomy of Entrepreneurship:



# **Taxonomy of Entrepreneurship**

13.4 The methods for integrating technopreneurship inti the curriculum based on taxonomy are as follows:

Level	Issues	Improvement
Level 1:	ULRS 3032	ULRS 3032
Basic	(Entrepreneurship &	(Entrepreneurship &
	Innovation) is only	Innovation) should be
	offered in year 3.	offered earlier in year 2.
	ULRS 3032 syllabus does	Topic related to intelectual
	not include topics	property and
	related to intelectual	commercialization should
	property.	be added into the syllabus.
Level 2: Practice	Practice element in	Course Information for
	ULRS 3032	ULRS 3032
	(Entrepreneurship &	(Entrepreneurship &
	Innovation) was not	Innovation) must include
	explain in details in the	the assesment of practice
	Course Information.	element.
	CO-OP activities should	A specific CO-OP program
	be strengthen and	should be established for
	properly reflested in the	enterpreneurship. The
	course credit allocation.	credit hours earned during

		the CO-OP programme
		should be accounted for
		and included in the Course
		Information.
Level 3:	Not all programs offer	Research methodology
Innovation	structured research	should be aligned across all
	metjodology in	undergraduate research
	undergraduate projects.	projects.
	Not all programs have	It is recommended to align
	the element/ topic	the elemet/ topic of
	about the market	market analysis in the
	analysis in the	Integrated Design Project
	Integrated Design	(IDP) for all relevant
	Project (IDP).	programs.
Level 4:	There are no subjects or	Offering a new elective:
Development of	courses that emphasize	New Venture Creation
Technology	the integration of	
	innovation,	
	entrepreneurship and	
	technology.	
	There is no alignment	Exposure to NABC
	and emphasis on	techique (Needs, Aproach,
	pitching elements in the	Benefit, Competition).
	assessment of	
	Capstone/ IDP.	
	There is no structured	Creating a student
	monitoring on	incubator program.
	technology	
	development.	
	There is continous	Providing a special
	internal funding.	allocation of funds.
Level 5:	There is no	Connecting student's
Commercialization	commercialization fund	company with public and
	offered to students.	private funding providers.

#### APPENDIX

Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus TC Diploma		Diploma Entry
1	18	18	Optional	Fundamental Knowledge 36 C1		СТ
2	18	18	Optional	Fundamental Knowledge And Applied Knowledge	36	**Integrated Diploma (Engineering Program} CT for Non- Engineering
3	18	18	5 (e.g LI)	Applied Knowledge And Problem Solving, Experiential Learning	36	Start here
*4	22 e.g. 12 (e.g WBL) (10)			Research and Industry Immersion, Specialization, Self Discovery ,Experiential Learning Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning	22	
					135	

## Example 1: Future Oriented Curriculum Structure for Engineering Faculty (135 credits)

\* Decided by Faculty

\*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)

# Example 2: Future Oriented Curriculum Structure for Faculty of Built Evironment & Surveying (FABU) (124 credits)

Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus	тс	Diploma Entry
1	18	18	Optional	Fundamental Knowledge	36	СТ
2	18	18	Optional	Fundamental Knowledge And Applied Knowledge	36	**Integrated Diploma
3	18	12 (LI)	Optional	Applied Knowledge And Problem Solving, Experiential Learning	30	Start here
*4	22 e.g.			Research and Industry Immersion, Specialization Self	22	
	12 (e.g WBL)	e.g. PSM (10)		Discovery ,Experiential Learning		
	,	()		Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning		
					124	

\* Decided by Faculty

\*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)

# Example 3: Future Oriented Curriculum Structure for Faculty of Computing (128 credits)

Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus	тс	Diploma Entry
1	17	18	Optional	Fundamental Knowledge	35	СТ
2	17	16	Optional	Fundamental Knowledge And Applied Knowledge	33	СТ
3	16	16	Optional	Applied Knowledge And Problem Solving, Experiential Learning	32	Start here
*4	28 e.g.		Optional	Research and Industry Immersion, Specialization Self	28	
	12 (LI)	16 PSM, WBL/O/Industry- based		Discovery ,Experiential Learning Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning		
					128	

\* Decided by Faculty \*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)

# Example 4: Future Oriented Curriculum Structure for SHARPS (128 credits)

Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus	тс	Diploma Entry
1	17	18	Optional	Fundamental Knowledge	35	СТ
2	17	16	Optional	Fundamental Knowledge And Applied Knowledge	33	СТ
3	16	16	Optional	Applied Knowledge And Problem Solving, Experiential Learning	32	Start here
*4	28 e.g.		Optional	al Research and Industry Immersion, Specialization, Self	28	
	12 (LI)	16 PSM, WBL/O/Industry- based		Discovery ,Experiential Learning Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning		
					128	

\* Decided by Faculty

\*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)

# Example 5: Future Oriented Curriculum Structure for Faculty of Science (122 credits)

Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus	тс	Diploma Entry
1	14	16	Optional	Fundamental Knowledge	30	СТ
2	16	16	Optional	Fundamental Knowledge And Applied Knowledge	32	СТ
3	18	18	Optional	Applied Knowledge And Problem Solving, Experiential Learning	36	Start here
*4	*4 24 e.g.		Optional	Research and Industry Immersion, Specialization, Self	24	
	12 PSM, WBL/O/Industry- based	12 (LI)		Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning		
					122	

\* Decided by Faculty

\*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)

Example 6: Future Oriented	l Curriculum St	tructure for MJIIT (	128 credits)
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Year	Sem 1	Sem 2	Sem 3 (Mei)	Focus	TC	Diploma Entry
1	17	18	Optional	Fundamental Knowledge	35	СТ
2	17	16	Optional	Fundamental Knowledge And Applied Knowledge	33	СТ
3	16	16	Optional	Applied Knowledge And Problem Solving, Experiential Learning	32	Start here
*4	*4 28 e.g.	Optional	Research and Industry Immersion, Specialization, Self Discovery ,Experiential	28		
	12 (LI)	16 PSM, WBL/O/Industry- based		Learning Options: WBL, IDEAL, REAL, PRISM, PSM, LI, Online, Home-based Learning		
					128	

\* Decided by Faculty
 \*\* Integrated Diploma – CGPA > 3.50 (3<sup>rd</sup> year Diplome Courses)