



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of Engineering, Built environment and  
Information Technology

## EBIT Transformation Framework

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## **1. Introduction**

The University of Pretoria has undertaken a pro-active position regarding the national concern with the lack of societal transformation since the advent of democracy in 1994 as contained in the following documents:

- Education White Paper 3: A Programme for the Transformation of Higher Education (1997);
- White Paper for Post-School Education and Training (2013);
- Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions (The Soudien Report 2008);
- Ministerial Oversight Committee on Transformation in South African Public Universities (2013) and
- Durban Statement on Transformation in Higher Education (2015).

The urgency of this matter was emphasised by the *#FeesMustFall* campaign and impacted on the revision of the University's long term strategic plan, so that the five-year plan 2017 – 2021 (UP 2016d) suggested the following:

*Transformation at UP is a strategic driver for ensuring success in teaching, learning and research, a means for attracting historically disadvantaged communities, and a catalyst for creating the conditions in which all members of the University can thrive. We recognize that our success is dependent on how well we value, engage and include students, staff and stakeholders (including suppliers) from diverse backgrounds. Transformation is an overarching institutional imperative that requires a fundamental change of the University's culture by embedding diversity, inclusion and equity, in every effort, aspect, and level of the University. The goal is to make transformation a norm that is practiced by everyone within UP.*

In order to ensure a rigorous and comprehensive implementation of these goals, it has been proposed that there ought to be an *on-going roll-out of institutional culture transformation roadmap, including monitoring and evaluation of progress and continuous feedback on progress* (UP 2017a). In the light of this, faculties across the institution have been tasked with developing their own response to this mandate. In some instances, such as the Faculty of Veterinary Sciences, specific value propositions have been considered in terms of curriculum

content, teaching and learning methods, social engagement as well as demographic inclusion with due consideration for international accreditation processes (UP 2017b).

In the case of the School of Engineering in the Faculty for Engineering, Built Environment and Information Technology (EBIT), it has been claimed that curriculum development is severely restricted in terms of international accreditation, leaving very little opportunity for further transformation (Meyer 2016). While not negating this view, it is the purpose of this working document to explore, investigate and collectively consider possible contributions that can be made from within this faculty, bearing in mind its focus on the development of technological skills based largely, but not exclusively, on scientific and mathematical knowledge systems.

As the meta-narrative of the transformation discourse in the country is largely concerned with the unpacking of colonial/ post-colonial thought systems, it is important to situate various perspectives on the technological sciences in this context. Capra (2002:93) points to the tensions that can ensue between cultural values and high technology:

*Technology advocates often discount those critical voices by claiming that technology is neutral: that it can have beneficial or harmful effects depending on how it is used. However, these defenders of technology do not realize that a specific technology will always shape human nature in specific ways, because the use of technology is such a fundamental aspect of being human.*

It is therefore recognised that the technical knowledge systems that are engendered within this faculty strongly contribute to the shaping of an environment that may support or restrict a society from attaining its full potential.

Due to the fact that the EBIT faculty contains a great diversity of views in this regard, it is proposed that, prior to developing a prescriptive implementation framework, a shared understanding of transformation needs to be developed in response to the four indicators of transformation as prepared by the executive of the University:

- Responsiveness to social context;
- Epistemological diversity;
- Renewal of pedagogy and classroom practices and

- An institutional culture of openness and critical reflection.

It is therefore proposed that this first step will entail the creation of a document relating to these four factors and how their meaning is understood within the EBIT faculty. It is also necessary that we identify the core values of the EBIT faculty, which will form the foundation for meaningful transformation. Following on this definition, it is then proposed that the tasks as instructed by the University Executive be undertaken.

## **2. Evaluation**

*Evaluate the current curriculum offered in your faculty in relation to, but not limited to, the four drivers listed above. You may wish to pay attention to areas where good progress has been made in transforming the curriculum as well as any limitations, gaps and shortcomings in the curriculum in its present form.*

### *Subject audit*

The proposed action plan for the EBIT faculty includes an evaluation of the existing programs within the EBIT faculty in order to:

- Categorize modules as being a module that poses a high, medium or low level of possible transformation to better align the content and focus of these modules with the South African context;
- Evaluate each module with regard to its current level as described by Banks (1993) and then also with regard to its potential level state. For example, a module such as JCP might already be on Level 4 where students engage and make decisions on important social issues; and
- Transform to the ideal level for each module, with consideration for the four drivers listed.

During the evaluation we will use Banks (1993) who proposes four levels of integration and we will use these levels of integration to investigate how multicultural content ('knowledge'), appreciation ('value') and context-specific/relevant action ('skill/s') may be integrated into our curricula. The levels included by Banks (1993) are:

- Level 1: The *contributions approach* where the focus is on the heroes, holidays and discrete cultural elements of the local context;

- Level 2: The *additive approach* where content, concepts, themes and perspectives are added to the curriculum without changing its structure;
- Level 3: The *transformation approach* where the structure of the curriculum is changed to enable students to view concepts, issues, events, and themes from the perspectives of diverse ethnic and cultural groups; and
- Level 4: The *social action approach* where students make decisions on important social issues and take actions to help solve them.

### **3. Challenges and limitations**

*How would you describe the challenges and limitations faced in your faculty in transforming the curriculum in light of, but not limited to, the four drivers above? You may wish to consider issues pertaining to the nature of specific disciplines, the influence of professional bodies, and practical issues relating to resources and the demands of the world of work.*

For challenges and limitations we propose an accreditation audit, in consideration of academic autonomy and revisiting social responsibility as described in the remainder of this section.

#### *Accreditation audit*

As part of the accreditation audit we will:

- Determine how many professional bodies are represented in the EBIT faculty;
- Establish accreditation and validation parameters across the faculty with the aim of understanding how restrictive or progressive they are;
- Determine whether the international parameters are aligned to the Global North or the Global South;
- Investigate how transformation is framed within the validation bodies' mandate; and
- Determine the ethos that underpins professional registration and its impact on inclusiveness.

#### *Academic autonomy*

As part of the academic autonomy we will:

- Determine the level of academic autonomy in the EBIT faculty (with reference to e.g. sponsors of research, accreditation bodies, government);
- Illustrate research impact on parameters for professional accreditation

- Examples of recent PhD docs in architecture pointing to gaps in the current curriculum – is it possible to implement such changes within SACAP constraints?
- Determine what influence UP's research mandate brings to bear on the transformation process.

### *Social responsibility*

As part of the social responsibility we will:

- Determine the level of impact derived from service learning modules; and
- Establish the extent to which there is vertical curriculum integration and critical reflection related to service-learning modules.

## **4. Teaching and learning**

*How could curriculum transformation, with particular emphasis on the context of learning, epistemological diversity, renewal of classroom practices, and social justice, be approached in your faculty and related disciplines within it?*

Our focus for Teaching and Learning will essentially seek to establish the view of 'the student' and how we can address the needs of 'the student'. The issues related to lecturers will be considered in the pre-phase where our goal is to establish a shared understanding and appreciation of the reasons for and objectives with transformation.

### *Student Analysis*

A short-term student analysis will consist of a trend analysis, followed by focus groups to understand the results of the trend analysis, concluding with a detailed survey (informed by insights gained during the focus group sessions). The survey will seek to interrogate further issues and challenges raised in the focus group sessions:

- *Short-term trend analysis*
  - Seen from an eco-systemic value system, it is important to determine the current socio-economic, political and personal pressures experienced by our student body, which in turn determines our academic and professional landscape. The purpose of the first round of surveys will therefore be to determine the view of our students within the faculty of EBIT with regard to transformation, including issues of concern, challenges and good practices

- *Focus Groups*
  - Using the findings from the survey at least three focus groups will be conducted in the different Schools with students to establish (1) a shared understanding of the challenge and need for change, (2) an appreciation of the complexities involved, and (3) a positive approach towards transformative practices.
- *Further investigation through the survey*
  - From the focus groups we will further investigate the challenges posed by an inherited legacies and contested heritages of the existing curricula across the faculty. One of these, i.e. the Newtonian thought paradigm underpinning a large segment of technological advancements over the last two centuries, will be considered in terms of environmental and cultural accountability, and be used in framing the survey.
- *Cohort Analysis*
  - A long- term analysis is proposed, supported through a SoTL grant to conduct a cohort analysis on a yearly basis of a group of 30 students through their journey within the EBIT faculty to reflect on their study experience. The parameters for this analysis are to be informed by the preceding surveys and focus group sessions. Students will be monitored from 2018 to 2022 (a five- year period), where annual cycles of critical reflection will form the basis of a decision-making platform influencing our context of teaching and learning.

## **5. Implementation plan**

*Outline fully the steps you will take as a faculty and as departments to address the imperatives of curriculum transformation, as per the document above. Please include an overall plan in this regard, accompanied by a clear timeline, where possible, of short-term, medium term and long-term priorities. Teaching and learning committees should lead this process.*

The first three tasks are seen as fundamental precursors to the development of our implementation plan, as this plan would need to be responsive to current shortcomings in our establishment as well as to the pillars of stability that may carry more significance than evident in the contemporary rhetoric of disruption. The undertaking of these proposed tasks is seen in the light of various proposals that are presently under consideration and are related to the four institutional drivers as follows:

- *Responsiveness to social context*

- Plans are underway to establish a Centre for Urban Citizenship, in which vertical curricular integration of engagement modules will be encouraged across all departments within the faculty, so as to nest the impact of programmes such as the JCP on both curricular development and contextually-relevant/specific development facilitation.
- *Epistemological diversity*
  - There are examples of restructured course content in many departments throughout the faculty and these activities will form part of the subject audit.
- *Renewal of pedagogy and classroom practices*
  - Following on the disruptions to the academic programme experienced during 2015-2016, there has been a rapid deployment of alternative teaching and learning practices across our faculty. Innovative methods employed to ensure the consistency of pass rates will similarly form part of the audit process discussed above.
- *An institutional culture of openness and critical reflection*
  - A proposition has been put forward to consider the renaming of module codes to be in line with the recent change in language policy. Perceptions of the value of such name changes in terms of a broader transformation programme will be explored through the survey and the focus group sessions.
  - A TLC workshop has been planned for October with a focus on transformation.

## 6. Conclusion

The EBIT faculty is fully committed to a responsible, well-informed and well-considered inclusionary process of critical co-reflection in the quest for relevance and appropriateness to our time and context, where transformation is seen as crucial to the ever-necessary and always-restless process of emergence, growth, solidification, evaluation and adaptation of (new) knowledge systems.

In conclusion:

*This spontaneous emergence of order at critical points of instability is one of the most important concepts of the new understanding of life. It is technically known as self-organization and is often referred to as 'emergence'. It has been recognized as the dynamic origin of development, learning and evolution. In other words, creativity – the generation of new forms- is a key property of all living systems. And since emergence is an integral part of the dynamics of open systems, we reach the important conclusion*

*that open systems develop and evolve. Life constantly reaches out to novelty.* (Capra 2002:14)

## **7. Project Plan**

A project plan for the activities listed above, is provided in Addendum 1, Table 1.

## **8. List of Contributors**

List of contributors to this document are provided in Addendum 2.

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## Addendum 1: Project Plan

Table 1: Project plan

Action Item	Description	Timeline	Leadership	Involvement
<i>PHASE 1</i>				
Precursory	Defining what EBIT sees as Transformation within a diverse faculty	July 2017 – February 2018	Transformation Committee and HoDs	Academic staff and student representatives
Detailed Project Planning	Develop a detailed GANTT chart in which targets and responsibilities will be clearly indicated	December 2017 – February 2018	Transformation Committee	HoDs
<i>PHASE 2</i>				
Task 1	Evaluation	February 2018 – June 2018	HoDs	Module co-ordinators
Task 2	Challenges and limitations	February 2018 – Nov 2018	HoDs	Advisory Boards Professional bodies Academic staff
Task 3	Teaching and learning	September 2017 – November 2021	EBIT Deputy Dean (T&L)	Teaching & Learning Committee Transformation Committee
<i>PHASE 3</i>				
Task 4	Implementation	From January 2019	All	
Awareness Campaign	Internalizing culture of curricular renewal	On-going	All	

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