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Facilitating Educational Opportunities for Pilots Using Cohort RPL

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Facilitating Educational Opportunities for Pilots using Cohort RPL

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Pio Fenton and Deirdre Goggin

The lifestyle and, indeed workstyle, of pilots has long proved an impediment to the attainment of third level qualifications while maintaining active and full participation in the workforce. Equally, the significant investment in pilot training has been poorly reflected in mechanisms of advanced entry to college and university programmes. This poses a quandary for those of us in Higher Education which requires quick resolution for this critical element of the airline industry.

Cork Institute of Technology (CIT) has developed a programme which, by design, reflects the training foundations and career trajectories of qualified pilots in a more holistic way. Through Recognition of Prior Learning (RPL) the programme recognises the extensive learning involved in becoming a pilot at commercial level. The underpinning technical expertise, the competences developed and tested along the way, and the attendant awareness of the industry are critical pieces of learning comparable to that developed in many degrees. The RPL process accepts the value of this learning and through a rigorous and quality-assured means equates this to years 1 and 2 of a 4-year Bachelor of Arts (Honours) in International Business with Aviation Studies.¹³¹

The degree programme

The Department of Marketing and International Business at CIT was initially approached by the Atlantic Flight Training Academy¹³² (AFTA) to consider the development of a business programme that would provide cross-skilling opportunities for graduates of their pilot training programmes. This paper outlines how validation was central in the development of the programme which valued the learning previously acquired. AFTA are, by virtue of their success, well embedded in the aviation sector in Ireland which itself successful beyond what the country's size would suggest¹³³. This is as a result of two large players Aer Lingus and Ryanair. The latter were involved in the development of this programme and recognised the important role of VPL very early on.

The outcome of the process saw the Department of Marketing and International Business validate a specially designed international business degree programme for airline pilots that reflected their training background, trajectories and career ambitions. The degree programme was developed to incorporate the key tenets of internationalisation with respect to business with emphasis on cultures, operations, logistics and strategy. The programme is delivered online and allows for progression through the programme in a timely manner reflecting the demands of careers within the aviation industry.

¹³¹ www.cit.ie/businesswithaviation

¹³² www.afta.ie

¹³³ <https://www.irishtimes.com/special-reports/aviation-finance/high-flying-aviation-industry-one-of-ireland-s-big-successes-1.3760055>

Entry criteria for the programme recognises the training of qualified airline pilots and through Recognition of Prior learning acknowledges their significant effort and learning at Level 6, 7 and 8 of the NFQ¹³⁴. The institute is considered a thought-leader in RPL and has considerable experience in its application¹³⁵. The qualification provides, through a conversion lens, key insight into issues confronting International Business. Candidates interested in the proposed programme are motivated by the need to have business qualifications as essential elements of their career progression opportunities.

Background to Collaboration

AFTA is a Cork-based Flight Training Organisation approved by the Irish Aviation Authority (IAA) with a main base in Cork International Airport and satellite operations in Waterford and Shannon. Their main operations involve 2 significant hangars, 18-aircraft fueling facility, a 5,000sqft Administration Centre (incorporating classrooms) and Simulator Centre including two state of the art simulators. Established in 1995 it has 51 instructors currently with 220 enrolled trainees with 70-100 graduates each year.

Training programmes include pre-registration aptitude testing, Integrated Airline Transport Pilot's Licence (ATPL) and at the other end of the spectrum Multi-crew Pilot Licence (MPL) Training. Training for the ATPL takes 16 months and includes 208 hours of flight and flight simulation, 843 hours of theoretical training amongst other self-directed and directed activities.

AFTA attracts a significant number of graduates owing to the co-location of the classroom and aircraft based training activities (this is somewhat unusual), the advantages offered by real-weather training as available in Cork and a VAT regime that ensures Pilot Training is exempt from charges that are applied in other countries. Equally, they place emphasis on their Professional Development Programme which aims to produce employable professional pilots rather than licence holders.

The need for the programme was established through an open-minded expansive engagement with AFTA. Initially, AFTA outlined the challenges of the aviation sector, its value to Ireland and beyond and the intensity and rigour of the training required to be undertaken to become a pilot. It became more and more obvious that the choice to become a pilot comes with some sacrifice. There is a start upfront cost outlay. Secondly, the lifestyle of pilots is such that access to third level on-campus courses is almost impossible without tailored delivery.

CIT's engagement with AFTA established a need for a programme that aided pilots in developing careers with certain carriers and within that to ensure appropriate promotion opportunities as required. Through the Department of Marketing & International Business further consultation sessions were held with AFTA in order to further elucidate their requirements. Internal discussions within CIT coupled with external engagement with key players such as Ryanair progressed the proposal to completion input from the Technology Enhanced Learning unit with respect to the proposed online delivery and Extended Campus with respect to the significant Recognition of Prior Learning elements.

Extended Campus Model

Recognising the need for responsive third level institutes and seeking to enhance the practice and potential of external engagement interactions by changing the way we interact with, and

134 [https://www.qqi.ie/Articles/Pages/National-Framework-of-Qualifications-\(NFQ\).aspx](https://www.qqi.ie/Articles/Pages/National-Framework-of-Qualifications-(NFQ).aspx)

135 <https://www.teachingandlearning.ie/new-report-a-current-overview-of-recognition-of-prior-learning-rpl-in-irish-higher-education/>

are viewed by, enterprise partners, internal changes have been implemented in Cork Institute of Technology to seek to join up and maximize the benefits of an already actively-engaged institution. Ensuring that the institution does not just teach entrepreneurship or support entrepreneurs but collects and uses business intelligence to, itself, act entrepreneurially. This led to a restructuring within CIT. This objective of the restructuring was to:

- Make it easier for external organizations to engage in mutually beneficial interactions with CIT academics and researchers.
- Develop a clear view of the extent and depth of existing and desirable engagement interactions to feed into institutional strategy and decision-making.
- Stimulate more interactions and measurably support regional economic development.
- Ensure that the variety of interactions with companies are collated and built on to develop broader supportive long-term mutually beneficial partnerships.
- Support enhanced practice development by exploration of processes and sharing of good practices.

The CIT Extended Campus was developed and launched as an interface to support interactions with all the various parts of the institution. CIT Extended Campus model built directly on the strategic importance of engagement for CIT, the knowledge, experiences and expertise gained through the leadership of the REAP project and an exploration of practice internationally. The role of the Extended Campus is to facilitate initial needs analysis and consultation sessions for external organisations with a view to matching them with appropriate internal units and individuals. Following this initial phase, the external organisation is introduced to the appropriate internal unit(s). At all stages in the interactions a customer relationship management system supports the collation of appropriate information and the compilation of information on queries and interactions provides a rich source of business intelligence for the strategic management of the institution.

In the context of this interaction CIT Extended Campus worked with the Department of Marketing and International Business on responding to the initial query received from Atlantic Flight Training Academy (AFTA). Their initial need was to secure upskilling opportunities for trained pilots seeking additional opportunities in the aviation industry or employment in the top five airlines internationally. An honours degree was the benchmark set by the industry for these opportunities.

Overview of Airline Industry and Pilot Training – The Challenges and Opportunities

This section provides an overview of the likely demand within the aviation sector for pilots over the next 10 years taking stock of the current situation and incorporating factors such as demographics, regional growth and lifestyle changes as afforded by rising global average incomes. The programme which was developed has qualified pilots as its exclusive intended target cohort. As such, the information presented herein paints a picture of the scale of this group and the obstacles that pilots have to surmount in order to undertake educational opportunities.

The general trajectory for a pilot's career tends to include the following training aspects:

- Aptitude testing for suitability assessment
- Initial ground training
- Simulator and flight training (sometimes ground and flight training are integrated as in AFTA).
- Private Pilot Licence

- Commercial Licence
- MPL Licence

At the end of this (or earlier in some cases) a trained pilot often commences their career with cargo carriers or low-cost carriers before taking up roles in time with flag-carriers as first officers and (after a significant period of time) subsequently to Captain.¹³⁶

Demand within the Airline Industry

Recent issues within certain airlines have brought the shortage of pilots available for the positions open to light in the public mind¹³⁷. While complex, the challenges experienced by these airlines present a perspective on the opportunities within the industry and the changing nature of the industry. The issues, though highlighted in limited recent examples, are certain to affect the entire aviation market. That said, there is evidence of increased provision through the major pathways for pilot training. These pathways include:

- Airline-focused flight training academies.
- Universities, military and business aviation schools.
- Small regional flight clubs and schools.

Between now and 2027 IATA predicts that 4.2% annual growth culminating in 4.8 billion air passengers with a doubling of unique city pairs to 18,000 and 37,000 commercial aircraft composing the global fleet. The demand for new pilots is also driven by several other factors:

- An increase in aircraft size¹³⁸ – aircraft size dictates the number of crew required. The average aircraft size is increasing.
- Pilot retirement and attrition¹³⁹ – this is a more significant issue in America but as the aviation business is inherently global the ramifications for Europe and Asia are likely to be potent. Pilot migration from Europe to the burgeoning Asian market has resulted in Europe having the lowest average pilot age of anywhere in the world.

CAE ¹⁴⁰(a training company) predicts that the airline industry will need to produce 70 pilots per day to meet global demand with the need for 80,000 pilots within Europe, Middle East and Africa with the regions' low-cost carriers being a significant driver of demand.

The growth in demand will then require the advancement of career progression in timelines which were unheard of up until recently. Progression within airlines is often predicated on experience coupled with third-level degrees. The airlines seek to identify individuals who have extended beyond their technical expertise and demonstrated the roundedness that sometimes comes with learning at this level. The skills required at First-officer level are such that a business degree (or similar qualifications) are good indicators of ability. The CAE states: *Airlines are not just looking for first officers to fill the right seat. They're looking for candidates with the potential to become captains within their organizations. As an industry, we must continuously improve and adapt our assessment and selection processes for different regions and airlines to reflect pilot competency requirements.*

136 A video can be seen at: <https://www.youtube.com/watch?v=H6cXwg8mo5Y&feature=youtu.be>

137 <https://www.cnbc.com/2019/06/17/boeing-ceo-says-global-pilot-shortage-is-one-of-the-biggest-challenges.html>

138 <https://science.howstuffworks.com/transport/flight/modern/airline-crew1.htm>

139 <https://www.forbes.com/sites/marisagarcia/2018/07/27/a-perfect-storm-pilot-shortage-threatens-global-aviation-even-private-jets/#1c32ae351549>

140 https://www.cae.com/media/documents/Civil_Aviation/CAE-Airline-Pilot-Demand-Outlook-Spread.pdf

It is perhaps this sentiment that best encapsulates the drivers of the programme that we are describing here. The airline industry is going to face unprecedented development in the coming years. Within that, the opportunities for those that wish to progress their careers, reflective of their groundings, are immense. This programme has at its heart an idea of complementarity as it couples two significant skillsets that are required for the expected profile of the aviation industry (business and technical knowledge of the area of operation). Essential to the design of a suitable programme was begin able to recognise the significant and challenging training that pilots have to undertake. Oddly, such training has been poorly recognised in educational circles. The programme we developed sought to ingrain that recognition through its RPL policies.

Recognition of Prior Learning in CIT

2019 marks 20 years of RPL in CIT, it began as an EU project in 1996 with an industry partner and became part of the central functions of the institution in 1999. This strategic decision by the management of the institution was fundamental to the development and subsequent involvement of RPL. Recent data gathered by the CIT Extended Campus regarding the breadth and depth of RPL practice within the institution has identified in excess of 6,000 successful RPL module applications, 37 full academic awards through validation, 696 modules have been applied for in 151 programmes. Advanced entry has been granted into 112 CIT programmes and in all disciplines and all levels of the NFQ.

In addition to the individual learner seeking validation for their prior learning, the institution has also worked with cohorts of students with a similar prior learning profile. The process adopted in these instances has been to do a mapping of the common learning elements linking to the standard of the national framework it relates to or to the content of a particular academic programme. RPL has been incorporated into customised course developments with industry to facilitate upskilling requirements without the necessity for repeating existing learning relevant to a programme.

RPL within the AFTA programme

As previously outlined, the focus of the programme development is on securing an opportunity for qualified pilots seeking an Honours Degree in International Business. The process of developing a customised course incorporating RPL was an extensive one where the content of the AFTA pilot training was analysed and mapped to levels 6, 7 and 8 on the Irish NFQ equating to levels 5 and 6 on the EQF by the Head of Department and course team. In addition to the pilot's licence, due to changes in the aviation industry and laws pilots are now required to undertake additional training reflective of increased security measures and work practices. It was determined through this extensive review and mapping exercise that the prior learning of the pilots equated to 120 ECTS credits. This mapping allowed us to present a 4-year programme where the first two years equated to that mapped content. The mapping built upon some precedent as well as a critical process of evaluation of the learning involved in various aspects of pilot training. These aspects combined provide the context of the RPL aspects and are detailed here.

The training provided by AFTA is used as a means to provide a yardstick within which to measure the general training provided by other pilot training schools and entails activities that have been previously recognised as equivalent to modules on the NFQ based on a mapping exercise performed in other universities primarily in the early 2000's. The total equivalent credit is 95 ECTS. New additions to pilot training that have emerged or been formalised since that time are detailed subsequently.

Table 2 Overview of recognised modules

Module Name	Credits	Level	Brief Description
<i>Private Pilot's Licence</i>	20	6	Essentials of Single Engine Flying
<i>Flight & Aviation Studies 1</i>	20	6	Further Flying (& Obtain Theoretical Exams)
<i>Flight & Aviation Studies 2</i>	20	7	Operate under visual flight rules
<i>Commercial Licence</i>	10	7	Operate under commercial pilots licence conditions
<i>Practical Flying Multi Engine-Instrument Rating</i>	10	8	Single Pilot Multi-Engine
<i>Modern Aircraft Systems</i>	10	8	Jet Orientation Control
<i>Multi Crew Co-operation</i>	5	8	Operate in Multi-crew Environment

The following is a summary of key training which has since become a regulatory or commercial requirement:

- Performance Based Navigation (PBN) - The course is designed to provide pilots with the required theoretical knowledge to fly GNSS approaches safely. Before starting RNAV (GPS/GNSS) approach or LPV approach practical training of the pilot must be qualified to fly RNAV1 (P-RNAV) arrivals and departures in accordance with OM-D and also to fly Overlay approaches.

It is permissible to combine these courses so that a pilot receives all the required elements of each course and therefore qualifies for RNAV (GPS/GNSS) approached and LPV approaches concurrently. The syllabus for this is 379 pages long and entails the type of language that emphasises decision making about complex situations within multi-faceted environments as well as the application of decisions that inherently require situational awareness.

- Upset Prevention & Recovery Training (UPRT) – This module provides comprehensive academic training that covers the broad spectrum of issues surrounding aeroplane upsets at the earliest stages of commercial pilot development; during type-rating training; and continued throughout the professional career at scheduled recurrent training intervals. It has largely been introduced since 2013 in response to a number of incidences within the industry. The syllabus is a significant document which is practically tested in training. The learning involved requires application of decision making and situational awareness, communication, leadership & teamwork.

These significant additions to the learning and CPD requirements of a pilot are amongst the developments of recent years which also include other elements such as Fatigue Risk Management (FRN). The latter is newer area of focus with significant emphasis on risk management and prevention.

Training within the aviation industry has evolved in recent years and now emphasises the development of competencies when assessing student ability. For example, a student's ability to land an aeroplane is not assessed in a tick-box fashion but in evidence of the application of various competencies to that activity. In this case, for example the following might be considered:

- Workload Management.
- Application of Procedures.
- Situational Awareness.
- Problem-solving and decision-making.
- Leadership.
- Teamwork.
- Communication.

Between the formally recognised credit bearing activity of the modules that have been mapped to the NQF and the training requirements of the newer training facets (particularly with respect to the evidence of competencies) a validation panel deemed there to be sufficient evidence of learning to merit recognition of 120 credit equivalent.

The programme

The programme was proposed with several innovative features which are reflective of the needs expressed by AFTA and further tested within the Airline industry through surveys, interviews and focus groups. In summary, the programme will be designed as a two-year add on at Level 8, delivered online, with 10-credit modules. The programme award is designed to be classified as 120-credit stage.

Table 3 Overview of Programme

Feature	Detail
<i>Duration</i>	2 years – 20 credits per semester over 6 semesters
<i>Nature of Award</i>	Bachelor of Arts
<i>Level</i>	8
<i>Number of Modules</i>	12
<i>Delivery Mode</i>	Online
<i>Department</i>	Marketing & International Business

The design of the programme has been considered to offer flexibility and to reflect the nature of careers as pilots within the airline industry. Online delivery is essential for pilots who are unable to commit to on-campus programmes that are delivered in the traditional manner. Intensive programmes have a value but were not considered suitable for long-term reflective learning. CIT's well-regarded Technology Enhanced Learning (TEL) Department offers a solution that meets the demands of this programme.

The programme is designed as a furthering of an existing technical learning experience under the classification of Bachelor of Arts. The pedagogical opportunities afforded by online delivery have resulted in the design incorporating 10-credit modules exclusively. Based on initial feedback during the design stage it seems that online delivery combined with the desire to have a cogent learning experience suggest that modules of this size might enhance the learning experience, and this has been supported by the lived experience as the programme runs. The modules are designed with 3-hour deliveries with specific resources designed for each module as part of the self-directed component of each module. The specialism of the programme is International Business. Prospective students of this programme are inherently global in outlook. Equally, they seek employment in a variety of countries and settings – this programme aims to provide a solid bedrock of awareness around politics, culture and internationalisation which will support graduates in meeting that end.

Figure 10 Programme Structure



Source: <https://www.cit.ie>

The Student Experience – Transparency around RPL

We believe that RPL should be a transparent aspect of the student experience. The entry learning portfolio captures the formal and informal learning of the applicant in a succinct portfolio that will be focused on assessing the students' ability to cope with the type of learning associated with a level 8 programme. The entry portfolio will therefore include:

- Documentary evidence of qualifications and training.
- Extended CV.
- Reflective log on learning to date.
- Short essay contrasting various business models within the aviation industry (for example).

The intention of the portfolio is not to act as hard go/no-go but to determine entrance suitability in line with the standard entry criteria. It will be used as a means to confirm student's interest and motivation while acting as a means to relay any challenging feedback at an early juncture.

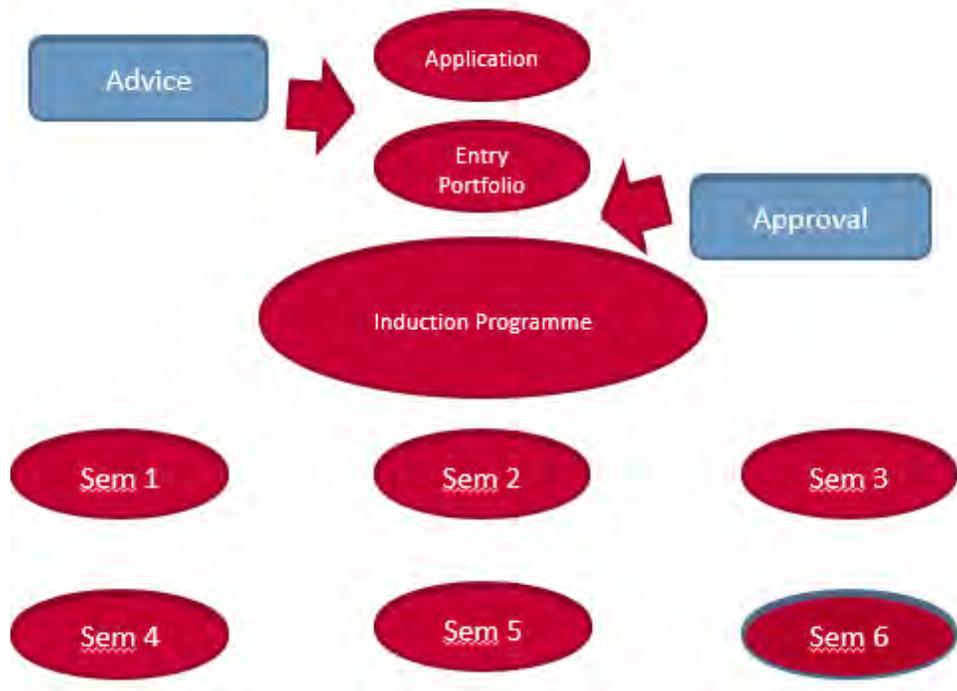
Formal Entry Criteria

1. Successful completion of a commercial pilot's license and the associated training equivalent in nature to that detailed within this document.

2. Submission of an appropriate Entry Learning Portfolio.
3. Applicants will be expected to have an IELTS of 6.0 for English language proficiency (or equivalent) where deemed necessary by the Head of Department.

The entire process is designed to ensure that the student has the best chance of completion. As the programme has run there have been some tweaks made to the advisory aspect of the application process but the RPL process has remained largely the same.

Figure 11 Student Journey



Source: <https://www.cit.ie>

Initial results

The programme was launched in June 2018 at Cork Institute of Technology with applications open for a September 2018 intake. By then 35 applications were made with 8 applicants withdrawing or disengaging during the initial application process. Of those that commence the programme a number did not progress with the programme beyond the first few weeks due to the workload involved in their own careers. A second intake commenced the programme in September 2019 with an eventual 37 applications being successful. The pilots have a range of roles from First Officer to Base captains. There is a significant gender imbalance in the programme with males outnumbering females substantially. An entire quantitative analysis is being undertaken but initial qualitative data suggest a very positive experience with students. The following table highlights some of the feedback gathered (it should be noted that positive reaction regarding VPL tends to arise at application stage).

Table 4 Initial Feedback

Senior First Officer	When the BA (Hons) International Business with Aviation Studies at CIT was announced, I immediately looked into it as I had been looking to start a degree over the last few years. The ability to do all lectures online is the only way I could have undertaken such a degree. All of the lecturers have vast experience in their respective fields and are very responsive to any questions we have. There is flexibility in course work deadlines which is also a huge help as my roster can be challenging at times. I would highly recommend that anyone interested should apply for the course. It has broadened my mind and opens up a lot of doors down the line.
Captain	<p>I am a captain with Ryanair and started the course at CIT last summer. It is very interesting to get to see what is going on in the offices of your airline and how business decisions are made, since as pilots we mainly work on the frontline. During the first semester we learned about management styles and techniques, comparing traditional and more contemporary styles, and getting to see how these are implemented in your own company.</p> <p>As an airline captain with a young family, time management can be difficult. Which is why the online course CIT is offering works out for me. I get to study when and where I want. Courses can be followed live at set times, or you can choose to view the recordings at a later time. I find myself switching between the different options per week, depending on my schedule.</p> <p>Workload can be high at times, especially when assignments are due, but so far the work has been really rewarding and I definitely feel obtaining a bachelor's degree covering all the different business aspects of aviation will contribute to the career of a commercial pilot. The level of the lecturers at CIT is very high, all of them have experience outside of the classroom, you can tell by the way they use real life examples that make the courses very engaging.</p>
Base Captain	Starting a new degree whilst maintaining a full-time job seemed daunting when I undertook the course, however despite my earliest reservations I have found it manageable. The ability to complete the course 100% online allows for flexibility when unable to attend lectures and it also means that reviewing material can be done from anywhere! The content is well delivered by great lecturers and topics cover an array of material that help give me the knowledge and ability in management and beyond!

Berlin Declaration and key reflections for the future

This programme firmly reflects the trajectory prompted by the spirit of the Berlin Declaration on Validation of Prior Learning in terms of the organisational arrangements, procedures and instruments and support structures. As a significant cohort-based approach it has worked with an identified group for which educational opportunities are scarce given the nature of the working life of pilots. The lack of opportunity is all the more challenging to fathom given the high outlay involved in becoming a pilot, the significant learning tasks in developing one's skillsets and the ongoing demands of a highly regulated working environment. The programme validation process and the organisational arrangements put in place reflect best practice. There is high transparency and clear links to the NFQ in Ireland. Financially, it is seamless with a reduced cost factor as a result of the innovative designed when compared to programmes that have not taken this approach. The visibility of the entry mode pushes the VPL aspect to the fore of the student mind and this is reflected in the student journey. In essence however, this programme represents a step-change in mindset – in the eyes of the learner – in the accessibility of an educational opportunity. That step-change has been facilitated by an approach to VPL that is imbued by the spirit of the Berlin Declaration.