### PROPOSAL – 1

### NEW DEGREE PROGRAM

1. **PROPOSED PROGRAM TITLE:** Master of Science in Engineering Management

2. **CIP CODE REQUESTED:** 14.0101, Engineering, General

3. **PROPOSED STARTING DATE:** Fall 2017

4. **CONTACT PERSON**

Name (Provost/Academic Affairs Officer): Dr. Terry Martin

Title: Vice-Provost for Academic Affairs

Name of Institution: University of Arkansas

E-mail Address: tmartin@uark.edu

Phone Number: 479-575-2151

Name: Dr. Richard Ham

Title: Associate Director, Operations Management

Email Address: richardh@uark.edu

Phone Number: 479-575-5521

5. **PROGRAM SUMMARY**

Provide a general description of the proposed program. Include overview of any curriculum additions or modifications; program costs; faculty resources, library resources, facilities and equipment; purpose of the program; and any information that will serve as introduction to the program.

Master of Science in Engineering Management prepares students to lead and manage engineering programs, technology, personnel and functions.

It is designed specifically to prepare engineers with ABET degrees to lead technical projects and technical workforces. The program provides application skills to solve real world leadership problems in an engineering setting. Each area of instruction helps graduates blend the best practices of engineering and business principles to provide value added to any organization.

Graduates will be able to:

1. Create engineering management strategic plans to support an organization’s vision and mission.
2. Evaluate and apply leadership theories for a technical workforce.
3. Apply techniques leading multi-disciplinary project teams to solve complex

problems in global operations involving processes, technology and people.

1. Assess financial status of programs and organizations using quantitative tools

and propose solutions to root causes of deficiencies.

1. Develop and evaluate solutions to complex, contemporary engineering

management problems using qualitative and quantitative decision and risk models.

1. Effectively communicate decision papers to senior stakeholders and decision

makers.

Only one new course, EMGT 5033 Introduction to Engineering Management required development based on current courses available in the College of Engineering. Leveraging the online courses and support staff in MSE, MSEE and MSOM eliminated redundant cost and start up requirements. EMGT 5033 would stand alone as a useful course in other engineering programs.

Program costs are absorbed into the current administrative costs of the Master of Science in Operations Management and the Master of Science in Engineering. Current staff have capacity to provide curriculum support, advising and student services.

List degree programs or emphasis areas currently offered at the institution that support the proposed program.

The Master of Science in Engineering (MSE), Master of Science in Electrical Engineering (MSEE)and the Master of Science in Operations Management (MSOM) will support the new program by providing applicable online courses already developed and delivered in each program. Faculty all possesses faculty status in the College of Engineering.

6. **NEED FOR THE PROGRAM**

(Submit Employer Needs Survey Forms)

Provide survey data. Submit numbers that show job availability, corporate demands and employment/wage projections, not student interest and anticipated enrollment. Focus mostly on state needs and less on regional and national needs, unless applicable to the program.

Survey data can be obtained by telephone, letters of interest, student inquiry, etc. Focus mostly on state needs for undergraduate programs; for graduate programs, focus on state, regional and national needs.

Provide names and types of organizations/businesses surveyed.

Letters of support should address the following when relevant: the number of current/anticipated job vacancies, whether the degree is desired or required for advancement, the increase in wages projected based on additional education, etc.

Indicate if employer tuition assistance is provided or if there are other enrollment incentives.

Describe what need the proposed program will address and how the institution became aware of this need.

Indicate which employers contacted the institution about offering the proposed program.

Employers active in engineering professional organizations in the state and region were asked to provide survey data. The survey data summary form is attached. Data includes:

Job titles for the proposed degree/certificate program:

* Director of Engineering & Technology
* VP of Engineering & Technology
* All sales positions
* Operations Management Positions in Service
* Energy Services & Controls
* Sales Manager
* Operations Manager Executive
* Various VP’s & Directors in IT subsidiary ArcBest
* Consultant
* Principal
* Director
* Professor
* Process Improvement Leader

Degree/certificate required for each job title:

* BSIE
* MSIE
* BS & MS in Computer Science
* BS in Engineering
* BS with Industry Experience
* Engineering Degrees
* Computer Science Degrees
* Math Degrees
* Quantitative Degrees
* Advanced Business Degrees
* Industrial Engineering Degree
* Information Systems Degree
* MS
* MA
* Ph.D.
* MSME

Number of current positions for each job title: 43

Indicate number of future positions for each job title: 24

Indicate salary for each job title: $80,000/per year

Indicate number of employers who gave preference for:

on-line/distance technology: 7

evenings: 4

weekends: 4

at company site: 4

Type of support employers will give for support of the proposed degree/certificate program.

Program Start-up Funds: 0

Provide an Internship Site: 1

Part-time Faculty: 2

Tuition Reimbursement: 6

Employee Release Time: 6

Equipment: 1

Summarize the skills needed for employment in the positions listed.

7 Interpersonal communications

5 Supervision/Management

4 Budgeting

7 Written/oral communications

6 Leadership/initiative

7 Data analysis

7 Team work

6 Planning/Organizing

3 Public Speaking

4 Independent worker

4 Conflict resolution

4 Marketing

7 Analytical reasoning

4 Teacher/Trainer

6 Computer applications

5 PowerPoint Presentations

0 Foreign Language (specify)

Other skills not listed (identify)

People/Interpersonal Relationship Skills

Program need was also determined by student interest in others programs, projected need for management of technical work forces and input from faculty conferences. Marketing, research and marketing of needs for Engineering Management in the local area and for military students and remote site established a need for an 8-week term program with the ability to enter at any point in the year. Master of Science in Operations Management has 9-10% of the student population each year with an ABET-accredited degree in engineering. Marketing efforts using typical print, electronic and social media as well as

Names of employers responding to survey:

* Tarek Taha
* Jim Bradford
* Bill Harrison
* David Humphrey
* Joel Brock
* Mitchell Kerman
* Kevin McManus

Types of Business/Organization:

|  |  |
| --- | --- |
| * JB Hunt/Transportation |  |
| * Harrison Energy Partners/Building Services |  |
| * ArcBest Corporation/Transportation & Logistics |  |
| * West Monroe Partners/Consulting |  |
| * Stevens Institute of Technology/University |  |
| * Great Systems/Training |  |

All employers indicated they would provide tuition assistance for employees seeking the Master of Science in Engineering Management

Employers and students will be recruited using print, electronic, social media, professional and alumni associations using the model currently employed by MSOM and MSE.

Each employer in the survey raised the need for skills in the MSEM program.

Indicate the composition of the program advisory committee, including the number of members, professional background of members, topics to be considered by the members, meeting schedule (annually, bi-annually, quarterly), institutional representative, etc.

Advisory committee members will include College of Engineering advisory committee and Curriculum Committee. The advisory committee meets quarterly and consists of professional engineers. Department chairs and program directors as well as tenure-track faculty participate and provide academic insight. Members are accomplished professional engineers. The committee reviews validity of curriculum to current engineering issues and requirements.

Indicate the projected number of program enrollments for Years 1 - 3.

25 per year

Indicate the projected number of program graduates in 3-5 years.

30 per year

7. **CURRICULUM**

# Provide curriculum outline by semester (include course number and title).

# (For bachelor’s degree program, submit the 8-semester degree plan.)

A notional semester curriculum for a student entering in the fall would include:

# 

Fall Semester 8 Week Term 1 (6 hours)

# *EMGT 5033 Introduction to Engineering Management \**

# OMGT 5783 Project Management \*

Fall Semester 8 Week Term 2 (6 hours)

# OMGT 5463 Economic Decision Making \*

# INEG/OMGT 5443 Decision Models \*

Spring Semester 8 Week Term 3 (6 hours)

# Two Graduate Engineering Courses approved by program coordinator\*

Spring Semester 8 Week Term 4 (6 hours)

# One Graduate Engineering Course approved by program coordinator\*

# One Elective from:

# EMGT 5793 Risk Management \*

# INEG/OMGT 5253 Leadership \*

# OMGT 5983 Advanced Project Management \*

# OMGT 5653 Introduction to Analytics for Operations Managers \*

# Other Graduate courses approved by program coordinator \*

Summer (6 hours)

* Two Electives from:
* EMGT 5793 Risk Management *\**
* INEG/OMGT 5253 Leadership \*
* OMGT 5983 Advanced Project Management \*

# OMGT 5653 Analytics for Operations Managers \*

# Other graduate courses approved by program coordinator \*

# Comprehensive Exam

\*Offered online.

NOTE: Students may take longer than one year to complete

Give total number of semester credit hours required for the program, including

prerequisite courses.

30 hours are required to complete the program.

Other Requirements:

No more than one course (3 hours) hours of 4000 level courses allowed

No independent or directed study courses allowed

At least 12 hours of course work must be graduate engineering courses

Comprehensive examination committee requirements include:

1. Three members

2. Chaired by tenured-track engineering faculty.

3. Include one other tenured-track engineering faculty.

4. Include one other graduate faculty member selected for knowledge and experience in program coursework

Identify new courses *(in italics)* and provide course descriptions.

*EMGT 5033 Introduction to Engineering Management*

Provides foundation knowledge of engineering management. Introduces quantitative skills required to lead a diverse, technical workforce, analyze financial data, lead technical projects, develop alternative solutions and communicate complex concepts. Apply decision and risk tools. Introduces basic engineering management principles.]

Identify required general education courses, core courses and major courses.

This graduate program does not require any general education courses. Core courses and major courses include:

EMGT 5033 Introduction to Engineering Management

OMGT 5783 Project Management

OMGT 5463 Economic Decision Making

INEG 5443/OMGT 5443 Decision Models

For each program major/specialty area course, list the faculty member assigned to

teach the course.

Faculty members are listed with course assignments in the table below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Last | First | Degree | Degree Field | College/ University | Areas of Instruction and Course Assignments |
| Balda | Juan Carlos | PhD | Electrical Engineering | University of Natal (Durban South Africa) | Electrical Engineering |
| Beam | Caroline | PhD | Industrial Engineering and Operations Research | University of California at Berkeley, Berkeley, California. | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Cassady | Richard | PhD | Industrial and Systems Engineering | Virginia Tech | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Cilli | Matthew | PhD | Systems Engineering | Stevens Institute of Technology, Hoboken, NJ | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Costello | Michael | EdD | Educational Innovation and Leadership | Wilmington University, New Castle, Delaware | Leadership, Management, Business, Process Improvement |
| Couvillion | Rick | PhD | Mechanical Engineering | Georgia Tech | Mechanical Engineering |
| Dennis | Norman | PhD | Geotechnical | University of Texas | Geotechnical Engineering, Engineering Management |
| Gagnon | David | MSOM | Operations Management | University of Arkansas | Supply Chain, Lean |
| Ham | Richard | EdD | Education, Aeronautical Science |  | Leadership, Supply Chain, Global Competition, Homeland Security |
| Hemphill | Dewey | PhD(ABD) | Business Administration; Management | North central University, Prescott Valley, AZ | Business, Supply Chain |
| Jackson | Phillip | PhD | Strategic Leadership | Regent University, Virginia Beach, Virginia, May | Strategic Leadership, |
| Lithgow | Dennis | MS | Business Administration | Boston University; Boston, Massachusetts | Business Administration |
| Loewer | Otto | PhD | Agricultural Engineering | Purdue University | Agricultural Engineering, Engineering Management |
| Manasreh | Omar | NRC | Electrical Engineering | Wright-Patterson AFB | Electrical Engineering |
| Mason | Scott | PhD | Industrial Engineering | Arizona State University | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Matlock | Marty | PhD | Biosystems Engineering | Oklahoma State University, Stillwater, OK | Biosystems Engineering |
| McCann | Roy | PhD | Electrical Engineering | University of Dayton, Dayton, OH | Electrical Engineering |
| McGlynn | Moira | PhD | Administrative and Engineering Systems | Union College of Union University, Schenectady, NY | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Melton | Kerry | PhD | Industrial Engineering and Management | Oklahoma State University, Stillwater, OK | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Mickelsen | Dennis | MS | Management | Troy State University, Pensacola, FL | Management, Leadership |
| Myers | William | MS | Chemical Engineering | University of Arkansas | Chemical Engineering |
| Naseem | Hameed | PhD | Materials Engineering Science | Virginia Polytechnic Institute and State University | Material Engineering |
| Nethercutt | Leonard | PhD | Business Administration | University of Memphis | Finance, Decision Making |
| Nutter | Darin | PhD | Mechanical Engineering | Texas A&M University | Mechanical Engineering |
| Parnell | Greg | PhD | Systems Engineering | Stanford | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Pleimann | Larry | PhD | Reinforced Concrete | University of Illinois at Urban-Champaign | Material Engineering |
| Pohl | Ed | PhD | Systems and Industrial Engineering | University of Arizona | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Pohl | Tish | PhD | Industrial Engineering | University of Arkansas | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Rainwater | Chase |  | Industrial Engineering | University of Arkansas | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Rardin | Ronald | PhD | Industrial & Systems Engineering | Georgia Institute of Technology | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Richardson | Tracey | EdD | Organizational Leadership | Argosy University, School of Psychology and Behavioral Sciences, Sarasota, FL | Project Management, Maintenance and Reliability |
| Rieske | David | MS | Industrial Engineering | University of Arkansas | Supply Chain, Lean |
| Roe | Larry | PhD | Mechanical Engineering | University of Florida | Mechanical Engineering |
| Rossetti | Manual | PhD | Industrial and Systems Engineering | The Ohio State University | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Roy | William | MSOM | Operations Management | University of Arkansas | Supply Chain, Information Management |
| Schott | Elizabeth | PhD | Industrial Engineering | New Mexico State University | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Selvam | R.Panneer | PhD | Civil Engineering | Texas Tech University | Civil Engineering |
| Smith | Christopher | PhD | Systems Engineering | University of Virginia | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Soerens | Thomas | PhD | Civil Engineering | University of Oklahoma | Civil Engineering |
| Springer | William | PhD | Mechanical Engineering | University of Texas at Arlington | Mechanical Engineering |
| Thompson | Dale | PhD | Electrical Engineering | North Carolina State University | Electrical Engineering, Information Technology |
| White | John | PhD | Industrial Engineering | The Ohio State University | Industrial Engineering, Operations Research, Engineering Management, Analytics, Risk Management |
| Wilson | Charles | EdD | Educational Innovation and Leadership | University of Arkansas | Health Care Management |
| Wright | Nia | MBA | Business Administration | Tulane University, New Orleans, LA | Supply Chain, Information Management |
| Wu | Jingxian | PhD | Electrical Engineering | University of Missouri | Electrical Engineering |
| Yeager | Milton | MA/ MSOM | Religion/ Operations Management | Liberty Baptist Theological Seminary/University of Arkansas | Lean and Quality |

Identify courses currently offered by distance technology (with an asterisk\*) and endnote at the end of the document.

All courses are offered by distance/online/synchronous video learning.

Indicate the number of contact hours for internship/clinical courses.

There are no internship courses.

State the program admission requirements.

# Program may be completed in any sequence and enter any term. EMGT 5033 must be completed in the first term unless waived by department.

Graduate school requirements at the University of Arkansas and an ABET-accredited Bachelors of Science Degree.

Describe specified learning outcomes and course examination procedures.

1. Create engineering management strategic plans to support an organization’s vision and mission.
2. Evaluate and apply leadership theories for a technical workforce.
3. Apply techniques leading multi-disciplinary project teams to solve complex problems in global operations involving processes, technology and people.
4. Assess financial status of programs and organizations using quantitative tools and propose solutions to root causes of deficiencies.
5. Develop and evaluate solutions to complex, contemporary engineering management problems using qualitative and quantitative decision and risk models.
6. Effectively communicate decision papers to senior stakeholders and decision makers.

Include a copy of the course evaluation to be completed by the student.

Standard course evaluation attached.

Include information received from potential employers about course content.

Employers addressed the need for advanced technical management and these skills:

7 Interpersonal communications

5 Supervision/Management

4 Budgeting

7 Written/oral communications

6 Leadership/initiative

7 Data analysis

7 Team work

6 Planning/Organizing

3 Public Speaking

4 Independent worker

4 Conflict resolution

4 Marketing

7 Analytical reasoning

4 Teacher/Trainer

6 Computer applications

5 PowerPoint Presentations

0 Foreign Language (specify)

Other skills not listed (identify)

People/Interpersonal Relationship Skills

Provide institutional curriculum committee review/approval date for proposed program.

December 7, 2016

8. **FACULTY**

List the names and credentials of all faculty teaching courses for the proposed program. Include college/university awarding degree; degree level; degree field; subject area of courses faculty currently teaching and/or will teach. (For associate degrees and above: A minimum of one full-time faculty member with appropriate academic credentials is required.) See table above.

Lead faculty member or program coordinator for the proposed program:

Dr. Edward Pohl, Professor and Department Chair, Department of Industrial Engineering is the program lead.

Total number of faculty required for program implementation, including the number of existing faculty and number of new faculty. **For new faculty, provide the expected credentials/experience and expected hire date.**

Forty-eight faculty currently support the MSE, MSEE and MSOM program and would be utilized for the new MSEM. No new faculties are required.

There are no start up costs associated with faculty or other administrative requirements. The support from MSE and MSOM programs will provide administrative needs.

For proposed graduate programs: Provide the curriculum vita for faculty teaching in the program, and the expected credentials for new faculty and expected hire date. Also, provide the projected startup costs for faculty research laboratories, and the projected number of and costs for graduate teaching and research assistants.

Curriculum vita attached for all faculty. There are no research laboratory and graduate teaching/research assistant costs.

**9. DESCRIPTION OF RESOURCES**

Current library resources in the field

Current instructional facilities including classrooms, instructional equipment and

technology, laboratories (if applicable)

New instructional resources required, including costs and acquisition plan

Current classroom, curriculum development and computer resources are sufficient to support the program. There are no new costs or capital improvement expenditures required. All current library resources, facilities, classrooms, equipment and technology may be used for the program. There are no additional classrooms, equipment or technical requirements for the program. All online resources at the University of Arkansas as well as the on campus library will be used to support the program.

**10. NEW PROGRAM COSTS – Expenditures for the first 3 years**

New administrative costs: No new administrators required.

Number of new faculty required: None

New library resources and costs: None

New/renovated facilities and costs: None

New instructional equipment and costs: None

Distance delivery costs (if applicable): None other than tuition/fee supported services

Other new costs (graduate assistants, secretarial support, supplies, faculty

development, faculty/students research, program accreditation, etc.): None

**If no new costs required for program implementation, provide explanation.**

All administrative cost will be absorbed into the current structure of Industrial Engineering, Operations Management, Master of Science in Engineering programs.

*See budget outline attached.*

**11. SOURCE OF PROGRAM FUNDING – Income for the first 3 years of program**

**Operation.**

If there will be a reallocation of funds, indicate from which department, program, etc.

All program costs will be supported from tuition and fees.

Provide the projected annual student enrollment, the amount of student tuition per

credit hour, and the total cost of the program that includes tuition and fees.

Projected student enrollment is 25 students per year. Program cost is $262.50 per credit hour and $150 per course distance fee. Total program cost is $9375 per student.

Indicate the projected annual state general revenues for the proposed program (Provide  
the amount of state general revenue per student).

There is no annual state general revenues or external support for this program. The program will be funded entirely off of tuition and fees.

Other (grants [list grant source & amount of grant], employers, special tuition rates,  
mandatory technology fees, program specific fees, etc.).

12. **ORGANIZATIONAL CHART REFLECTING NEW PROGRAM**

Proposed program will be housed in the Department of Industrial Engineering, College of Engineering.

13. **SPECIALIZED REQUIREMENTS**

If specialized accreditation is required for program, list the name of accrediting agency.

Indicate the licensure/certification requirements for student entry into the field.

Provide documentation of Agency/Board review/approvals (education, nursing—initial

approval required, health-professions, counseling, etc.)

Not applicable.

14. **BOARD OF TRUSTEES APPROVAL**

Provide the date that the Board approved (or will consider) the proposed program.

March 30, 2017

Provide a copy of the Board meeting agenda that lists the proposed program, and

written documentation of program/unit approval by the Board of Trustees prior to the Coordinating Board meeting that the proposal will be considered.

15. **SIMILAR PROGRAMS**

# List institutions offering program:

## Proposed undergraduate program – list institutions in Arkansas

Proposed master’s program – list institutions in Arkansas and region

Proposed doctoral program – list institutions in Arkansas, region, and nation

State why proposed program needed if offered at other institutions in Arkansas or   
 region.

List institution(s) offering a similar program that the institution used as a model to   
 develop the proposed program.

One program similar in scope and online:

Arkansas State University

The degree at ASU requires some engineering, but does not require an ABET bachelors’ degree. The proposed degree focuses on students with ABET certified undergraduate degrees and that can enjoy flexibility of 8-week terms, online offerings and support of Fayetteville campus for local business and remote campuses in Little Rock, Arkansas, Memphis, Tennessee and Hulbert Field Florida catering to military students provides a unique support system. Students in the Operations Management program with ABET degrees at military campuses, around the nation and around the world have indicated a desire to earn an MSEM degree.

Benchmarked institutions/programs included (not all inclusive): Penn State, Cornell, Dartmoth, Duke, MIT, Northwestern, Stanford, USC, Stephens, Missouri S&T, Old Dominion, Onion State, University of Dayton, University of Colorado-Boulder, University of Alabama-Huntsville, University of Florida, University of Central Florida, Texas Tech, Drexel, Purdue, University of Arizona, University of Tennessee-Tallohoma.

Provide a copy of the e-mail notification to other institutions in the state notifying them of the proposed program. Please inform institutions not to send the response to **“Reply All”**. If you receive an objection/concern(s) from an institution, reply to the institution and copy ADHE on the email. That institution should respond and copy ADHE. If the objection/concern(s) cannot be resolved, ADHE may intervene.

**Note: A written institutional objection/concern(s) to the proposed program/unit may delay Arkansas Higher Education Coordinating Board (AHECB) consideration of the proposal until the next quarterly AHECB meeting.**

16. **DESEGREGATION**

State the total number of students, number of black students, and number of other minority students enrolled in related degree programs, if applicable.

Historical numbers from similar programs used to project demographics in the program:

30% female

30% minority

19% African American

1. **INSTITUTIONAL AGREEMENTS/MEMORANDUM OF UNDERSTANDING (MOU)**

If the courses or academic support services will be provided by other institutions or

organizations, include a copy of the signed MOU that outlines the responsibilities of each party and the effective dates of the agreement.

Not applicable.

1. **ACADEMIC PROGRAM REVIEW**

Provide scheduled program review date (within 10 years of program implementation date).

2019-2020

1. **PROVIDE ADDITIONAL INFORMATION IF REQUESTED BY ADHE** **STAFF**
2. **INSTRUCTION BY DISTANCE TECHNOLOGY**

If the proposed program will be offered by distance technology, provide the following information:

Summarize institutional policies on the establishment, organization, funding and management of distance courses/degrees.

Describe the internal organizational structure that coordinates (development, technical support, oversight) distances courses/degrees.

Summarize the policies and procedures to keep the technology infrastructure current.

Summarize the procedures that assure the security of personal information.

Provide a list of services that will be outsourced to other organizations (course materials, course management and delivery, technical services, online payment, student privacy, etc.).

Policies for development of distance courses and degrees require approval at various levels of academic and administrative authority, including requirements from the Higher Learning Commission and Arkansas Department of Higher Education. Internally, the Global Campus and programs collaborate to build development shells and Quality Matters checklist to ensure areas of instruction are mapped to approved program outcomes and learning objectives. Technology infrastructure is updated through a coordinated and collaborative committee with academic, administrative and learning management system expert. Marketing, analysis, learning management system help desk, online payments and privacy are evaluated by respective vice chancellors to ensure each area is in compliance and maintained to the highest standard. Information Technology security departments ensure personal information is updated and monitor any potential breaches of systems.