THE UNIVERSITY of EDINBURGH
informatics

Board of Studies

Course Proposal Template

PROPOSED COURSE TITLE: Image and Vision Computing

PROPOSER(S): Timothy Hospedales, Kartic Subr, Bob Fisher

DATE: 18 Jan 2017

SUMMARY

This template contains the following sections, which should be prepared roughly in the order in which they appear (to avoid spending too much time on preparation of proposals that are unlikely to be approved):

1. Case for Support
– To be supplied by the proposer and shown to the BoS Academic Secretary prior to preparation of an in-depth course description

1a. Overall contribution to teaching portfolio

1b. Target audience and expected demand

1c. Relation to existing curriculum

1d. Resources

2. Course descriptor
- This is the official course documentation that will be published if the course is approved, ITO and the BoS Academic Secretary can assist in its preparation

3. Course materials
- These should be prepared once the Board meeting at which the proposal will be discussed has been specified

3a. Sample exam question

3b. Sample coursework specification

3c. Sample tutorial/lab sheet question

3d. Any other relevant materials

4. Course management

- This information can be compiled in parallel to the elicitation of comments for section 5.

4a. Course information and publicity

4b. Feedback

4c. Management of teaching delivery

5. Comments

- To be collected by the proposer in good time before the actual BoS meeting and included as received

5a. Year Organiser Comments

5b. Degree Programme Co-Ordinators

5c. BoS Academic Secretary

[Guidance in square brackets below each item. Please also refer to the guidance for new course proposals at http://www.inf.ed.ac.uk/student-services/committees/board-of-studies/course-proposal-guidelines. Examples of previous course proposal submissions are available on the past meetings page http://web.inf.ed.ac.uk/infweb/admin/committees/bos/meetings-directory.]

SECTION 1 – CASE FOR SUPPORT

[This section should summarise why the new course is needed, how it fits with the existing course portfolio, the curricula of our Degree Programmes, and delivery of teaching for the different years it would affect.]

1a. Overall contribution to teaching portfolio

[Explain what motivates the course proposal, e.g. an emergent or maturing research area, a previous course having become outdated or inappropriate in other ways, novel research activity or newly acquired expertise in the School, offerings of our competitors.]

This is a proposal for a new course **Image and Vision Computing (IVC).** IVC will cover the basics of computing with images and expose students to the basics of graphics, image processing and computer vision in terms of fundamental theory and practice.

The course is proposed based on a review of IPAB teaching provision and its creation will permit a set of related IPAB courses to be improved. There are several motivations

1. Computer vision has grown dramatically in saliency, with research breakthroughs in recent years dramatically increasing algorithm performance, and opening up exciting new applications. The improved technology has led to a number of impressive industrial applications with extensive media attention. In order to keep our offerings up to date, expand them in line with the demonstrations students see in the media, and support the expected increased student interest, we need to expand our teaching in this area.
2. Impact on Advanced Vision: Needs updating to include some of the very new and high impact deep learning research. Moving some basic vision material from AV to IVC will permit this. IVC will then provide an excellent foundation for Advanced Vision.
3. Impact on RSS: The current RSS course was deemed too large and diverse to cover topics in more than superficial detail. The computer vision component of the course will be extracted for inclusion in IVC, allowing RSS to be updated to cover the core robotics concepts in sufficient detail. This means also means that students purely interested in robotics are not forced to study vision as in current RSS. Similarly students taking RSS because of vision interest are not forced to study robotics.
4. Impact on IVR: The current IVR course has a mix of UG+PG students, which we believe is contributing to bad satisfaction scores. Having an introductory vision course at MSc level will remove PG students from IVR, keeping these cohorts separate and leading to better satisfaction.
5. Some related courses in IPAB remit (Advanced Vision, RSS, Graphics) contain overlapping material that can be extracted and rationalised into a single course. Graphics + Advanced Vision also share some foundation concepts.
6. Impact on Computer Graphics: Basic material on image formation will be included to provide a better foundation for S2's Computer Graphics course.

1b. Target audience and expected demand

[Describe the type of student the course would appeal to in terms of background, level of ability, and interests, and the expected class size for the course based on anticipated demand. A good justification would include some evidence, e.g. by referring to projects in an area, class sizes in similar courses, employer demand for the skills taught in the course, etc.]

This course will appeal to MSc students interested in vision and graphics. Competence in programing and basic maths (linear algebra, probability) will be expected.

Graphics and vision are very topical areas in industry with increasing media coverage. In particular computer vision is increasingly being used in industrial practice in the form of face recognition/tagging on social media platforms, self-driving cars, super-human Atari agents etc. Given the increased visibility of these fields, high student interest is expected.

Current RSS has 35 students – a minority of these who are in RSS due to interest in vision will leave to IVR. The current IVR has 40UG+19PG, the 19PG students are expected to move to IVC. We also expect to attract new students via the simultaneously proposed distance learning version of this course. Overall expected demand is about 30-40 campus, and 5 distance students.

1c. Relation to existing curriculum

[This section should describe how the proposed course relates to existing courses, programmes, years of study, and specialisms. Every new course should make an important contribution to the delivery of our Degree Programmes, which are described at http://www.drps.ed.ac.uk/15-16/dpt/drps_inf.htm.

Please name the Programmes the course will contribute to, and justify its contribution in relation to courses already available within those programmes. For courses available to MSc students, describe which specialism(s) the course should be listed under (see http://web.inf.ed.ac.uk/infweb/student-services/ito/students/taught-msc-2015/programme-guide/specialist-areas), and what its significance for the specialism would be. Comment on the fit of the proposed course with the structure of academic years for which it should be offered. This is described in the Year Guides linked from http://web.inf.ed.ac.uk/infweb/student-services/ito/students.]

UG Degree programs. MInf only. ~~All: AI, CogSci, CompSci, Informatics, Software Engineering.~~

PG Degree Programs. All: AI, CogSci, Comp Sci, Data Science, Design, Informatics.

MSc Specialisms: Machine Learning, Intelligent Robotics, Data Science, Computer Systems, Software Eng & HPC.

Related Courses: Provides prerequisite for AV. Complements CG. Complements RSS to cover the sensing side of a robotic system. Allows improvements to RSS material, and IVR logistics as explained in overview.

1d. Resources

[While course approvals do not anticipate the School's decision that a course will actually be taught in any given year, it is important to describe what resources would be required if it were run. Please describe how much lecturing, tutoring, exam preparation and marking effort will be required in steady state, and any additional resources that will be required to set the course up for the first time. Please make sure that you provide estimates relative to class size if there are natural limits to its scalability (e.g. due to equipment or space requirements).

Describe the profile of the course team, including lecturer, tutors, markers, and their required background. Where possible, identify a set of specific lecturers who have confirmed that they would either like to teach this course apart from the proposer, or who could teach the course in principle. It is useful to include ideas and suggestions for potential teaching duty re-allocation (e.g. through course sharing, discontinuation of an existing course, voluntary teaching over and above normal teaching duties) to be taken into account when resourcing decisions are made.]

First Time: 1 month preparation time. The course lecturer will prepare the notes, and design the exercises and projects. Most material will be drawn from RSS with some from AV, so the workload will not be too high. Some material will be refreshed and added to fill in the gaps.

Lecturers: Need basic expertise in Image and Vision Computing. IPAB currently has 4 staff members (Timothy Hospedales; Kartic Subr, Bob Fisher, Taku Komura) of this profile, and is hiring one more. T. Hospedales is expected to deliver the course in 2017/18.

TA: A PhD student TA will be available to monitor the VLE for questions, answer questions in person at the weekly tutorial, and grade the course miniproject.

Coursework Marker: PhD student Marker will be responsible for inspecting the submitted code, evaluating its quantitative performance on a computer vision task, reading an associated lab report, and writing some feedback for each.

Scalability: There is no special limiting factor. As usual the size of the computing lab means the logistics are easier if the student numbers are under 50.

SECTION 2 – COURSE DESCRIPTOR

[This is the official course descriptor that will be published by the University and serves as the authoritative source of information about the course for student via DRPS and PATH. Current course descriptions in the EUCLID Course Catalogue are available at www.euclid.ed.ac.uk under 'DPTs and Courses', searching for courses beginning 'INFR'*]*

2a. Course Title *[Name of the course.]*:

Image and Vision Computing

2b. SCQF Credit Points:

[The Scottish Credit and Qualifications Framework specifies where each training component provided by educational institutions fits into the national education system. Credit points per course are normally 10 or 20, and a student normally enrols for 60 credits per semester. For those familiar with the ECTS system, one ECTS credit is equivalent to 2 SCQF credits. See also http://www.scqf.org.uk/The%20Framework/Credit%20Points.]

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SCQF Credit Level:

[These levels correspond to different levels of skills and outcomes, see http://www.sqa.org.uk/files_ccc/SCQF-LevelDescriptors.pdf At University level, Year 1/2 courses are normally level 8, Year 3 can be level 9 or 10, Year 4 10 or 11, and Year 5/MSc have to be level 11. MSc programmes may permit a small number (up to 30 credits overall) of level 9 or 10 courses.]

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Normal Year Taken: 1/2/3/4/5/MSc

[While a course may be available for more than one year, this should specify when it is normally taken by a student. "5" here indicates the fifth year of undergraduate Masters programmes such as MInf.]

MSc

Also available in years: 1/2/3/4/5/MSc

Different options are possible depending on the choice of SCQF Credit Level above: for level 9, you should specify if the course is for 3rd year undergraduates only, or also open to MSc students (default); for level 10, you should specify if the course is available to 3rd year and 4th year undergraduates (default), 4th year undergraduates only, and whether it should be open to MSc students; for level 11, a course can be available to 4th and 5th year undergraduates and MSc students (default), to 5th year undergraduates and MSc students, or to MSc students only]

4-5

2c. Subject Area and Specialism Classification:

[Any combination of Computer Science, Artificial Intelligence, Software Engineering and/or Cognitive Science as appropriate. For courses available to MSc students, please also specify the relevant MSc specialist area (to be found in the online MSc Year Guide at http://web.inf.ed.ac.uk/infweb/student-services/ito/students/taught-msc-2015/programme-guide/specialist-areas), distinguishing between whether the course should be considered as "core" or "optional" for the respective specialist area.]

MSc Specialisms: Optional In: Machine Learning, Intelligent Robotics, Data Science, Computer Systems, Software Eng & HPC. All optional. UG: Informatics, AI, Cog Sci, Comp Sci, Software Engineering.

Appropriate/Important for the Following Degree Programmes:

[Please check against programmes from http://www.drps.ed.ac.uk/15-16/dpt/drps_inf.htm to determine any specific programmes for which the course would be relevant (in many cases, information about the Subject Area classification above will be sufficient and specific programmes do not have to be specified). Some courses may be specifically designed for non-Informatics students or with students with a specific profile as a potential audience, please describe this here if appropriate.]

As above.

Timetabling Information:

[Provide details on the semester the course should be offered in, specifying any timetabling constraints to be considered (e.g. overlap of popular combinations, other specialism courses, external courses etc).]

Semester 1. In order to complement CG (S1) and RSS (S1), and prerequisite for AV (S2)

2d. Summary Course Description:

[Provide a brief official description of the course, around 100 words. This should be worded in a student-friendly way, it is the part of the descriptor a student is most likely to read.]

In this course we will learn how images are formed given the objects in the three dimensional world, and the basics of how computer vision inverts this process – computing properties of the world from digital images. We will cover topics including basic image formation, image processing, detection, matching and recognition that allow computers to understand the world based on image content.

Course Description:

[Provide an academic description, an outline of the content covered by the course and a description of the learning experience students can expect to get. See guidance notes at: http://www.studentsystems.is.ed.ac.uk/staff/Support/User_Guides/CCAM/CCAM_Information_Captured.html

Learning Experience: The course will be delivered in a flipped format, with students watching recorded lectures and reading material, with the "lecture" functioning as a discussion session.

Content: The course proceeds in five parts from foundational concepts such as image formation, through to low-level image processing operations, before building upon those to develop image representations, and use those representations for higher level tasks such as recognition and detection. The following four parts are roughly two weeks each.

Image formation. The basic mathematics and physics of how images are formed based on light reflected by real-world objects. Includes ideal pinhole camera and lens models. Some basic 3D geometry, radiometry and photometry.

Low-level image analysis. We will introduce basic algorithms such as convolution and filtering for image processing, and RANSAC for fitting. These will be applied for tasks such as edge detection, and line-fitting. To provide a taste of recognition students will perform shape recognition using Bayes theorem.

Image Representations: To support working with more unconstrained realistic images, we next introduce feature representations for both local and global features including color histograms, HOG/SIFT, and descriptor bag of words.

High-level image analysis: Building upon these image representations, we discuss the topical tasks of object recognition and sliding window-based object detection.

Applications: Finally, we finish up with introduction to some applications including basic video processing (optical flow), and foreground detection.

Pre-Requisite Courses:

[Specify any courses that a student must have taken to be permitted to take this course. Pre-requisites listed in this section can only be waived by special permission from the School's Curriculum Approval Officer, so they should be treated as "must-have". By default, you may

assume that any student who will register for the course has taken those courses compulsory for the degree for which the course is listed in previous years. Please include the FULL course name and course code].

None. (But IVC should become a prerequisite for AV)

Co-Requisite Courses:

[Specify any courses that should be taken in parallel with the existing course. Note that this leads to a timetabling constraint that should be mentioned elsewhere in the proposal. Please include the FULL course name and course code].

None

Prohibited Combinations:

[Specify any courses that should not be taken in combination with the proposed course. Please include the FULL course name and course code].

Not Introduction to Vision + Robotics (IVR).

Other Requirements:

[Please list any further background students should have, including, for example, mathematical skills, programming ability, experimentation/lab experience, etc. It is important to consider that unless there are formal prerequisites for participation in a course, other Schools can register their students onto our courses, so it is important to be clear in this section. If you want to only permit this by special permission, a statement like "Successful completion of Year X of an Informatics Single or Combined Honours Degree, or equivalent by permission of the School." can be included.]

Confident programming in at least one language. Willing to learn MATLAB or Python for coursework.

Linear algebra: Algebra on vectors and matricies.

Basic geometry: Lines, planes, hyperplanes.

Basic calculus: differentiation.

Available to Visiting Students: Yes/No

[Provide a justification if the answer is No.]

Yes

2e. Summary of Intended Learning Outcomes (MAXIMUM OF 5):

[List the learning outcomes of the course, emphasising what the impact of the course will be on an individual who successfully completes it, rather than the activity that will lead to this outcome. Further guidance is available from https://canvas.instructure.com/courses/801386/files/24062695]

On completion of this course, the student will be able to 1. Explain the basic physics and mathematical principles of image formation. 2. Understand basic image processing operations such as convolution. 3. Write programs to solve basic image analysis tasks such as edge detection and line fitting. 4. Understand the concepts of local and global image descriptors, and descriptor matching. 5. Write programs to perform image analysis tasks of recognition and detection.

Assessment Information

[Provide a description of all types of assessment that will be used in the course (e.g. written exam, oral presentation, essay, programming practical, etc) and how each of them will assess the intended learning outcomes listed above. Where coursework involves group work, it is important to remember that every student has to be assessed individually for their contribution to any jointly produced piece of work. Please include any minimum requirements for assessment components e.g. student must pass all individual pieces of assessment as well as course overall].

The course will contain both a practical miniproject (25%) to implement an actual computer vision application, weekly quiz in the flipped classroom session to promote engagement (5%) and exam (70%).

The exam will cover the course concepts, similar to the current vision component of RSS exam.

Assessment Weightings:

Written Examination: 70%

Practical Examination: 0%

Coursework: 30%

Time spend on assignments:

[Weightings up to a 70/30 split between exam and coursework are considered standard, any higher coursework percentage requires a specific justification. The general expectation is that a 10-point course will have an 80/20 split and include the equivalent of one 20-hour coursework assignment (although this can be split into several smaller pieces of coursework. The Practical Examination category should be used for courses with programming exams. You should not expect that during term time a student will have more than 2-4 hours to spend on a single assignment for a course per week. Please note that it is possible, and in many cases desirable, to include formative assignments which are not formally assessed but submitted for feedback, often in combination with peer assessment.]

20 hours

Academic description:

[A more technical summary of the course aims and contents. May include terminology and technical content that might be more relevant to colleagues and administrators than to students.]

See course description.

Syllabus:

[Provide a more detailed description of the contents of the course, e.g. a list of bullet points roughly corresponding to the topics covered in each individual lecture/tutorial/coursework. The description should not exceed 500 words but should be detailed enough to allow a student to have a good idea of what material will be covered in the course. Please keep in mind that this needs to be flexible enough to allow for minor changes from year to year without requiring new course approval each time.]

- Mathematics of Image Formation. Camera models. Lenses. Basic 3D geometry.
- Basic Image Processing: 2D convolution for edge detection. RANSAC line detection.
- Basic shape recognition using Bayes theorem.
- Local + Global Descriptors: Descriptor Bag of Words. E.g., Color Histogram, HOG/SIFT.
- Object recognition.
- Sliding window-based object detection.

Relevant QAA Computing Curriculum Sections:

[Please see http://www.qaa.ac.uk/en/Publications/Documents/SBS-Computing-consultation-15.pdf to check which section the course fits into.]

Computer Vision, Computer Generated Imagery

Human Computer Interaction, Multimedia Computing, Machine Learning

Graduate Attributes, Personal and Professional skills:

[This field should be used to describe the contribution made to the development of a student's personal and professional attributes and skills as a result of studying this course – i.e. the generic and transferable skills beyond the subject of study itself. Reference in particular should be made to SCQF learning characteristics at the correct level http://www.sqa.org.uk/files_ccc/SCQF-LevelDescriptors.pdf].

The activities in this course will develop skills in lab work, report writing, and programming.

Team working skills. For group (probably in pairs) participation in the course miniproject.

Also the flipped classroom discussion sessions (see following section) will promote SCQF11 skills such as "Develop original and creative responses to problems and issues " and "Critically review, consolidate and extend knowledge, skills, practices and thinking in a subject/discipline/sector"

Reading List:

*[Provide a list of relevant readings. See also remarks under **3d**.]*

Breakdown of Learning and Teaching Activities:

[Total number of lecture hours and tutorial hours, with hours for coursework assignments.]

[The breakdown of learning and teaching activities should only include contact hours with the students; everything else should be accounted for in the Directed Learning and Independent Learning hours.

The total being 10 x course credits. Assume 10 weeks of lectures slots and 10 weeks of tutorials, though not all of these need to be filled with actual contact hours. As a guideline, if a 10-pt course has 20 lecture slots in principle, around 15 of these should be filled with examinable material; the rest should be used for guest lectures, revision sessions, introductions to assignments, etc. Additional categories of learning and teaching activities are available, a full list can be found at:

http://www.euclid.ed.ac.uk/Staff/Support/User_Guides/CCAM/Teaching_Learning.htm]

The major activities will be:

- Watching pre-recorded lecture videos. The students do this on their own time before the contact session with the lecturer. Expected 2 hours per week = 20 hours.
- Flipped classroom sessions. Having watched the lecture videos, the students attend the flipped classroom session with the lecturer. The activities here include: (i) Q&A about about the content of the lecture video. (ii) A simple pass/fail quiz administered via LEARN (designed to be easy if they have watched the lecture) to promote engagement. Worth ½% per week. (iii) Breaking into small groups to discuss problems set by the lecturer related to the content of this week's lecture video. Problems will include tasks such as critically analysing the strengths and weaknesses of a specified vision algorithm, or creatively develop novel vision-based approaches to a specified visual understanding problem. Expected 1 hours per week = 10 hours.
- Working on coursework miniproject. There will be an allocated lab session with a TA on hand to answer questions. Expected 20 hours.

Lecture Hours: 20 hours (videos)

Seminar/Tutorial Hours: 10 hours (flipped classroom session)

Supervise practical/Workshop/Studio hours: 20 hours (miniproject lab session):

Summative assessment hours: 2 hours

Feedback/Feed forward hours: 2 hours

Directed Learning and Independent Learning hours: 46 hours

Total hours: 100 hours

You may also find the guidance on 'Total Contact Teaching Hours' and 'Examination & Assessment Information' at:
http://www.studentsystems.ed.ac.uk/Staff/Support/User_Guides/CCAM/CCAM_Information_Captured.html

Keywords:

[A list of searchable keywords.]

Computer vision

Image Processing

Computer Graphics

new courses. A justification of the exam format should be provided where the suggested format non-standard. The online list of past exam papers gives an idea of what exam formats are most commonly used and which alternative formats have been http://www.inf.ed.ac.uk/teaching/exam_papers/.]

As the bulk of the material is a refresh of the RSS vision component, the prior RSS vision exam questions provide an example. E.g., https://exampapers.ed.ac.uk/record/54444/1/2016148-INFR11092.pdf - Q1(b), Q2(c,d), Q3(a,b)

3b. Sample coursework specification

[Provide a description of a possible assignment with an estimate of effort against each sub-task and a description of marking criteria.]

The coursework is designed to motivate students by giving them the chance to implement a small but non-trivial and exciting computer vision system from the ground up. Tutors will grade the mini-projects based on their implementation of the required concepts, and the final practical performance on detection and recognition.

Implement a face detection and recognition system. Students will be given a set of images of persons, and a watch-list of reference images of faces to detect. They will be provided with a skeleton program for this task, and should use their knowledge from this course to complete the program. Implement routines:

- encodeBoundingBox() inputs an image and produces a descriptor. [5 marks]
- isFace() decides if a bounding box encoding contains a face. [5 marks]
- findFace() iterates over the image and returns all bounding boxes with faces. [5 marks]
- recogniseFace() estimates the identity of a found face. [5 marks]

with a further marks for correctly detecting [5 marks] and recognising [5 marks] the faces in a provided reference image. Total [30 marks]

Expected effort: 20 hours over 5 weeks.

3c. Sample tutorial/lab sheet questions

[Provide a list of tutorial questions and answers and/or samples of lab sheets.]

NA

3d. Any other relevant materials

[Include anything else that is relevant, possibly in the form of links. If you do not want to specify a set of concrete readings for the official course descriptor, please list examples here.]

Relevant Books:

- Simon Prince, Computer Vision Models, CUP.
- Richard Szeliski, Computer Vision Algorithms & Applications, Springer.
- Forsyth & Ponce, Computer Vision a Modern Approach, Pearson.

SECTION 4 - COURSE MANAGEMENT

4a. Course information and publicity

[Describe what information will be provided at the start of the academic year in which format, how and where the course will be advertised, what materials will be made available online and when they will be finalised. Please note that University and School policies require that all course information is available at the start of the academic year including all teaching materials and lecture slides.]

The course will be advertised on the Informatics website under both PG and UG programs. It can also be advertised by Edinburgh Robotics, alongside other offerings in vision and robotics.

All the course material will be served from the Learn VLE hosted by the University, pointing to the inverted lecture set, reading list, assignments and other relevant materials which are hosted in Learn or MediaHopper (the University's new media server)

4b. Feedback

[Provide details on feedback arrangements for the course. This includes when and how course feedback is solicited from the class and responded to, what feedback will be provided on assessment (coursework and exams) within what timeframe, and what opportunities students will be given to respond to feedback.

The University is committed to a baseline of principles regarding feedback that we have to implement at every level, these are described at http://www.docs.sasg.ed.ac.uk/AcademicServices/Policies/Feedback_Standards_Guiding_Principles.pdf.

Further guidance is available from http://www.enhancingfeedback.ed.ac.uk/staff.html.]

Students will receive formative feedback through online tutorial participation, eg. via Skype or Collaborate, and Learn's online discussion forum. Each student will also receive formative feedback through intermediate stages of the development of the miniproject. Summative feedback will occur through written feedback on their project report and demonstration. Additionally, we will monitor class issues through the use of a class student representative, and also occasional SurveyMonkey polls.

4c. Management of teaching delivery

[Provide details on responsibilities of each course staff member, how the lecturer will recruit, train, and supervise other course staff, what forms of communication with the class will be used, how required equipment will be procured and maintained. Include information about what support will be required for this from other parties, e.g. colleagues or the Informatics Teaching Organisation.]

The course lecturer will be responsible for management and delivery. PhD student tutors will be recruited and trained via the usual mechanism. The primary delivery platform will be LEARN. For programming we are considering Python and/or MATLAB options on the DICE environment.

SECTION 5 - COMMENTS

[This section summarises comments received from relevant individuals prior to proposing the course. If you have not discussed this proposal with others please note this].

This course was discussed at IPAB staff and teaching provision review meetings.

A preliminary version was discussed at BoS in Nov 2016.

Frank Keller made some workload comments that were clarified.

5a. Year Organiser Comments

[Year Organisers are responsible for maintaining the official Year Guides for every year of study, which, among other things, provide guidance on available course choices and specialist areas. The Year Organisers of all years for which the course will be offered should be consulted on the appropriateness and relevance on the course. Issues to consider here include balance of course offerings across semesters, subject areas, and credit levels, timetabling implications, fit into the administrative structures used in delivering that year.]

5b. BoS Academic Secretary

[Any proposal has to be checked by the Secretary of the Board of Studies prior to discussion at the actual Board meeting. This is a placeholder for their comments, mainly on the formal quality of the content provided above.]