

## Department Annual Monitoring Report

Departmental Information	
Department (or School, Institute, Centre, as appropriate)	Physics
Faculty	Natural Sciences
Author of report (including job title)	Dr Robert J Forsyth, Director of Undergraduate Studies
Period covered by the report	2017-18 academic year
Date report produced	20 November 2018
Deadline for submitting report	By midday on 21 November 2018

Programmes within the scope of this report
Physics (BSc 3YFT)
Physics (MSci 4YFT)
Physics and Music Performance (BSc 4YFT)
Physics with Science Education (BSc 3YFT)
Physics with Science Education (MSci 4YFT)
Physics with Theoretical Physics (BSc 3YFT)
Physics with Theoretical Physics (MSci 4YFT)
Physics with a Year in Europe (MSci 4YFT)

Collaborative Programmes within the scope of this report (e.g. joint award, double award, collaborative Imperial award, collaborative external award)	
Only collaborative programmes where the College is the lead administrative party and responsible for the quality and standards	
Programme	Partner
Physics and Music Performance (BSc 4YFT)	Royal College of Music
Physics with Science Education (BSc 3YFT)	Canterbury Christchurch University
Physics with Science Education (MSci 4YFT)	Canterbury Christchurch University

Collaborative Modules within the scope of this report	
Only collaborative modules delivered by partners which contribute to collaborative programmes where the College is the lead administrative party and responsible for the quality and standards)	
Module	Partner

Where there are significant issues in relation to collaborative programmes and/or collaborative modules that require further action by the Department, these should be summarised in **Section 7 Collaborative Provision** and **Section 10b Future Action Plan** only

## Section 1: Departmental Overview and Context

- Summarise the key features of the Department's provision or provide a link to the Department's webpage where this information is available
- Provide a short evaluation of the Department's provision (e.g. identify overarching themes, notable achievements and/or staff developments)
- Highlight any major programme changes delivered in the period covered by the report or planned changes for the next academic session.

The Department of Physics is one of the largest in the UK and is the second-largest department in the College in terms of its total population of undergraduate students. The Department receives over 1600 applications each year from highly qualified applicants for its target intake of 240 students, attracted in particular by the Department's high quality research reputation. All of the Department's programmes are accredited by the Institute of Physics (IOP), renewed for a further five year period in 2015.

2017-18 was a year where no major changes were made to our Physics programmes following on from the changes arising from our previous internal curriculum review rolling through to Year 4 in 2015-16 and as we prepare our College led curriculum review for Year 1 implementation in 2019-20. Minor changes in 2017-18 included the first teaching of a revised Year 1 Laboratory & Computing course where students are now all taught Python programming in the first half of Term 1 and are then able to use it for data analysis and modelling tasks in the remainder of their laboratory work. One aspect of this which could be highlighted as good practice is that the students' first laboratory report is now assessed purely formatively.

The Department is now focussing on its curriculum review for implementation in 2019-20. Following on from the Year1 laboratory changes, significant investment is going ahead in our Year 2 and Year3 laboratory programmes. Some upgrading of Year 2 experiments has been implemented for 2018-19 which will be continued into 2019-20. Some quick-fix upgrades were also made to existing Year 3 experiments in advance of significant investment of time and money in introducing new experiments over the next few years.

One programme change approved during 2017-18 was a name change of our MSci Physics with a Year in Europe to MSci Physics with a Year Abroad. This was to accommodate a new exchange agreement with MIT where the teaching is all in English where the first exchange of students is taking place this year in 2018-19. We are also in advanced discussion on an English language exchange with the University of Utrecht in the Netherlands.

Strengths	Issues
Students are attracted to study Physics at Imperial by the Department's reputation for being at the cutting edge of research in a broad range of areas. This is manifested in our teaching by the wide range of elective modules we are able to offer in Years 3 and 4 and by the wide range of projects we are able to offer in Years 1, 3 and 4. Final year projects in Years	<p>The issues highlighted last year in 2016-17 continue to be our major concerns.</p> <p>Student Feedback: Our showing in the NSS survey deteriorated further in 2017-18 (Section 5 of this report). Issues raised include consistency of</p>

<p>3 and 4 are often based in the research groups and a few each year lead to student participation in scientific publications.</p> <p>Student Achievement: our graduating students continued to perform very strongly in 2017-18 although our proportion of First Class degrees returned to more typical levels – the increase in 2016-17 was explainable by student demographics as described in Section 2 of this report.</p> <p>Student Destinations: The majority of our students continue to be in either employment or further study 6 months after graduation with only small a small proportion still seeking employment. These proportions have not changed significantly over very many years.</p>	<p>assessment and feedback, lack of community in the Department, lack of student space as well as inconsistency in pastoral care.</p> <p>Pastoral Support: Variability of support provided by personal tutors remains an issue. We adopted the Starfish student support in the summer of 2016 which should allow better monitoring now that staff are getting used to it after initial teething trouble. Our Student Liaison Officer has now been in post for a year and is providing additional support. Refresher training for personal tutors coordinated by the Faculty Senior Tutor is taking place in 2018-19.</p> <p>Curriculum: We continue to be aware that certain parts of our curriculum have become overcrowded particularly towards the end of Year 2. This is being addressed through the curriculum review but we have already asked staff to reduce lecture course content where they can in 2018-19.</p>
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### Reporting within the following sections should be 'by exception'

- Where there is evidence of consistently good performance and no issues are identified, the relevant box should be marked and no further commentary is required
- Examples of good practice should be identified throughout the report and, where these could be implemented across College if suitably adapted, should be summarised in **Section 8: Good Practice/Commendable Achievements**
- Where there is significant deviation in quantitative data from one academic year to the next or recommendations within qualitative reports, these should be commented on in the relevant sections
- Where issues have been identified, these should be addressed with appropriate actions in the **Section 10: Departmental Action Plan**.

## Section 2: Student Progression and Outcome, Achievement, Non-Continuation

### Data:

- **Student Progression and Outcome (by Gender, Ethnicity, Disability, Fee Status)**
- **Student Achievement (by Gender, Ethnicity, Disability, Fee Status)**
- **TEF: Student Non-Continuation from first year to second year of studies (by Gender, Ethnicity, Disability and POLAR).**

Departments should reflect on any significant trends or outliers in relation to student progression and outcome, achievement, and non-continuation. It is at the discretion of the Department as to what constitutes an outlier, but as a guide:

- A variation of + or – 5% in the data between academic years
- A combined percentage of less than 70% or a variation of + or – 10% in the number of students achieving first or upper second class honours degrees (for undergraduate programmes)
- A variation of + or – 10% of Pass/Merit/Distinction degree classifications compared to the College average (for postgraduate programmes)
- A student non-continuation rate above the national subject level TEF benchmark

### Please mark as appropriate

Yes <input type="checkbox"/>	Were there any significant trends or outliers in relation to student progression and outcome?
No <input checked="" type="checkbox"/>	
Yes <input type="checkbox"/>	Were there any significant trends or outliers in relation to student achievement?
No <input checked="" type="checkbox"/>	
Yes <input type="checkbox"/>	Were there any significant trends or outliers in relation to student non-continuation?
No <input checked="" type="checkbox"/>	

When the student achievement data is aggregated across cohorts, we confirm that our proportion of first class degrees has returned as expected to the proportion typical of previous years following the unusually high outcome of 51% first class degrees in 2016-17. This was explainable based on decisions made at the end of Year 2 by students from the respective cohorts (2013 and 2014 entry) graduating that year. See last year's report for a detailed discussion.

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### Section 3: External Examiner Reports

**Data:**

- External examiner reports and responses

Individual programme responses to these should have already been provided to the Quality Assurance and Enhancement Team. If not, please remind your colleagues to do so.

**Please mark as appropriate**

<b>Yes</b> <input checked="" type="checkbox"/> <b>No</b> <input type="checkbox"/>	Were there any significant issues raised by External Examiners in their reports that require further action by the Department?
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Issues raised by external examiners that have resulted in an action should be included in **Section 10b: Future Action Plan**. No further commentary is required in this section as external examiner issues are addressed fully through a) programme teams' responses to external examiners and b) the College level external examiner report produced by the Quality Assurance and Enhancement Team.

### Section 4: Professional, Statutory and Regulatory Body (PSRB) and other external reports

**Data:**

- PSRB accreditation reports and latest action plans (data held by Department)

Where accreditation visits have taken place in the reporting period, please state the programmes that have been (re)accredited and when the accreditation agreement requires renewal. Recommendations from PSRB visits do not need to be stated in this section as full PSRB reports should be submitted with the annual monitoring report.

**Please mark as appropriate**

<b>Yes</b> <input type="checkbox"/> <b>No</b> <input checked="" type="checkbox"/>	Did any PSRB (re)accreditation visits take place in the period covered by this report?
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Issues raised by PSRB visits that have resulted in an action should be included in **Section 10b: Future Action Plan**. No further commentary is required in this section as issues raised in PSRB visits are addressed fully through programme teams' responses to PSRBs, which should be included as appendices to the annual monitoring report.

## Section 5: Student Feedback

### Data:

- **National Student Survey (NSS) summary (undergraduate only)**
- **TEF: National Student Survey (NSS) Split metrics (undergraduate only)**
- **Postgraduate Taught Experience Survey (PTES) (postgraduate only)**
- **SOLE survey results**

The Department should reflect upon student feedback holistically and identify any key issues, themes or trends. The Department should reflect upon any other sources of student feedback such as Staff-Student Committees and local surveys.

### Please mark as appropriate

<b>Yes</b> <input checked="" type="checkbox"/>	Were there any significant issues, themes or trends arising from student feedback that require further action by the Department?
<b>No</b> <input type="checkbox"/>	

The 2018 NSS survey results were even more disappointing for our department than in previous years. We are already taking action in response to this led by our Head of Department and two staff meetings were already held during the summer to discuss an action plan. Issues raised in the NSS free text comments included student workload, lack of a sense of community, lack of study space, inconsistency in personal tutoring and pastoral care, and feedback. Quality of teaching received both positive and negative comments, while positive comments highlighted the intellectually stimulating nature of the course and the Year Abroad programme in particular.

We have been asked to produce an action plan addressing NSS issues for the December Faculty Management Committee. This will be based around the plan already circulated to students by the Head of Department in October which I will not repeat here in full. Key points include:

- Addressing curriculum overload by reviewing and reducing the amount of material covered in modules throughout our programmes as part of the curriculum review process, but also immediately in this academic year where it is possible for individual lecturers to do this as part of their individual courses.
- Augmenting the traditional "Freshers Tea" with "Welcome back" events for all year groups already held in October, to be repeated at the start of Term 2 in January.
- Final year MSci project students being invited to seminars and social events run by the research groups in which they are undertaking their projects.
- Advertising weekly lists of times when the various seminar rooms in the Department are not in use for other activities and thus booked out as study space for students.
- Refresher training for personal tutors coordinated by the Faculty Senior Tutor and making clear to students that they can and should report issues with their personal tutors through the student liaison officer.
- Overhaul of the marking and feedback process in our Third Year Lab to ensure deadlines are routinely met and senior staff freed up to spend more time directly interacting with students.
- Lecturers will run an early poll in week 3 of their courses seeking feedback from students so that areas of concern can be identified early on.

## Section 6: Student Destinations

**Data:**

- [Destination of Leavers from Higher Education \(DLHE\) summary \(available online\)](#)
- **TEF: Destination of Leavers from Higher Education (DLHE) split metrics**

The Department should reflect upon any significant issues or changes in relation to trends in graduates' first destinations. The Department should highlight any employability initiatives offered and provide examples that have been particularly successful and could be communicated more widely.

**Please mark as appropriate**

**Yes** ☐  
**No** ☒

Were there any significant issues or changes in relation to employment trends?

There appears to be an error in the presentation of the Physics percentage data in the DLHE split metrics table which I will query.

**Please mark as appropriate**

**Yes** ☒  
**No** ☐

Did the Department offer any employability initiatives?

These are not new initiatives but employability skills are spread throughout our degree programmes as part of our Professional Skills modules and in our Laboratory and Project modules. These include CV and cover letter preparation in Year 1, group work in Years 1, 3 and 4, introduction to preparing a business case in Year 3, and development of oral and written presentation skills throughout the programme.

**Section 7: Collaborative Provision**

To be completed where the College is the lead administrative party and responsible for the quality and standards of collaborative programmes (e.g. joint award, double award, collaborative Imperial award, collaborative external award) or collaborative modules delivered by partners leading to a College award.

Where the College is not directly responsible for the quality and standards of collaborative programmes or modules, the annual monitoring report completed by the partner (with College input) should be included as an appendix.

**Please mark as appropriate**

**Yes** ☒  
**No** ☐

Were there any significant issues in relation to collaborative programmes and/or modules that require further action by the Department?

We have been notified by Canterbury Christchurch University that they are unable to sustain their contribution to the BSc and MSci Physics with Science Education degree programmes. We have therefore taken steps to suspend these programmes. There are no students on these programmes in the 2018-19 academic year and students who might have been in a position to transfer on to the programmes are aware of the situation.

**Section 8: Good Practice and Commendable Achievements**

Summarise key instances of good practice. The Department is not expected to repeat all items

where these have been summarised in other sections above, rather **identify key examples which could, if suitably adapted, be implemented elsewhere in the College.**

Example of good practice	Report Section Number (if applicable)
Please add further rows to this table, if required.	
In order to celebrate and promote excellence across the College please provide details of commendable achievements during the period covered by the report.	
Example of commendable achievement	Report Section Number (if applicable)
Please add further rows to this table, if required.	

## Section 9: Recommendations for action at a Faculty or College level

Highlight specific matters relating to the delivery of programmes and the student experience more generally that may fall outside the Department's direct control and therefore require the attention of the Faculty and/or College. Where this may be a matter for further consideration by a specific Department or service within the College, please detail in the table below if known.

Matters raised in this section should be limited to aspects relevant to student's educational experience. Please only make realistic recommendations which it is appropriate to address/consider via the annual monitoring process, such as changes to Faculty or College level policies or procedures. Issues that could be considered to be part of the 'wider' student experience such as car parking, catering, transport or heating should not be included in this section. **Where appropriate you should contact the service provider directly at the time of the issue.**

Where appropriate, matters raised in this section will be reported to the relevant Department or service within the College who will be expected to provide a formal response and, where necessary, to identify further action to address the issue.

Matter for further consideration at Faculty and/or College level	Department or Service (if applicable)	Report Section Number (if applicable)
Please add further rows to this table, if required.		





## Section 10a: Updated action plan

No.	Action	Evidence of issue (e.g. external examiner report [Examiner name], NSS data etc.)	Action required by whom (name and role)	Target date for achievement	Date action completed / update
1	Review the transition in learning support available to students moving from Year 2 to Year 3 (carried forward from 2016-17).	Student feedback via external examiner reports and NSS	DUGS, SLO and Teaching Committee	October 2018	Action now absorbed into curriculum review process
2	Review laboratory and computing teaching for Years 2 and 3 of our degree programmes with a view to making substantial improvements to the experimental programme and its associated assessment and feedback processes.	2015 IOP accreditation report and NSS	Dr Simon Bland, DUGS, Heads of Labs	June 2018	Upgrading of experiments and facilities has commenced in both labs with a second phase due next year. Assessment and feedback has been reviewed and updated in Year 3 Lab. Action carried forward to October 2019.
3	Teaching Committee to review completion on minor recommendations from 2015 IOP accreditation report not addressed elsewhere (carried forward from 2016-17)	2015 IOP accreditation report	DUGS and Teaching Committee	March 2018	Action now absorbed into curriculum review process
4	Form two working groups to consider longer term actions in response to NSS and separately on the mental health issues raised, to report back to HoD and Teaching Committee early in 2018	NSS data and free comments	Prof Richard Thompson on behalf of HoD	March 2018	NSS group met twice in 2018 but has been overtaken by the Department level response to the 2018 NSS results. A Departmental Welfare Committee has been established.
5					

## Section 10b: Future action plan

The action plan should only highlight key issues or areas to be addressed across the Department's programmes over the coming academic year. The action plan is intended to be a live document which should be updated throughout the year as appropriate.

Actions should be **SMART**: Specific; Measurable; Agreed; Relevant and Realistic; Time bound

No.	Summary of the issue/area for enhancement and source(s) of evidence	Action proposed	Person responsible (name and job title):	Expected completion date	Date action completed / progress update:
1	Laboratory experiments and facilities are very dated. Evidence from IOP accreditation report and NSS results.	Review laboratory and computing teaching for Years 2 and 3 of our degree programmes with a view to making substantial improvements to the experimental programme and its associated assessment and feedback processes.	Dr Simon Bland, DUGS, Heads of Labs	October 2019	Upgrading of experiments and facilities has commenced in both labs with a second phase due next year. Assessment and feedback has been reviewed and updated in Year 3 Lab.
2	Many good suggestions for review/improvement of examination management processes from our new external examiner.	DUGS and Examinations Coordinator to convene a meeting of examinations team to review suggestions, decide which can be implemented this year or carried forward, and monitor outcomes.	DUGS, Examinations Coordinator	Meet December 2018, Review at key points in March and June 2019.	
3	Issues raised in Section 5 from NSS 2018 results	Prepare a Departmental action plan for submission to December Faculty Management Committee	HoD, DUGS	December 2018, Continued progress review by HoD, Teaching Committee and Staff-Student Committee	
4					

No.	Summary of the issue/area for enhancement and source(s) of evidence	Action proposed	Person responsible (name and job title):	Expected completion date	Date action completed / progress update:
5					

On completion, please return the completed form to the Quality Assurance & Enhancement Team (Scott Tucker - [scott.tucker@imperial.ac.uk](mailto:scott.tucker@imperial.ac.uk) and Michelle Galloway – [m.galloway@imperial.ac.uk](mailto:m.galloway@imperial.ac.uk))

## Appendices

The following sources of evidence and information will be appended to the report by the Quality Assurance and Enhancement Team:

### Section 2:

- Student Progression and Outcome data
- Student Achievement data
- TEF: Student Non-Continuation data

### Section 3:

- External Examiner reports (including Departmental responses)

### Section 5:

- National Student Survey (NSS) summary (undergraduate only)
- TEF: National Student Survey (NSS) Split metrics (undergraduate only)
- Postgraduate Taught Experience Survey (PTES) (postgraduate only)
- SOLE survey results

### Section 6:

- Destination of Leavers from Higher Education (DLHE) summary
- TEF: Destination of Leavers from Higher Education (DLHE) split metrics

The following sources of evidence and information should be submitted with the report by the Department:

### Section 3:

- External Examiner responses (where these have not already been submitted to the Quality Assurance and Enhancement Team)

### Section 4:

- PSRB accreditation report and latest action plan (if applicable)

### Section 5:

- NSS Action Plan (where this has been produced) (undergraduate only)
- PTES Action Plan (postgraduate only)

### Section 7:

- Annual Monitoring reports from collaborative partners (where the College is not directly responsible for the quality and standards of collaborative programmes or modules)