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**TSST COURSE AUDIT FORM**

**This form is designed to allow community based panels of teachers to evaluate each other's course, facilitated by the Institute of Physics.**

**Courses which meet the required standard will be deemed to have received IOP-enabled community approval.**

**Evaluators will be primarily looking at consistency between course objectives/outcomes and mode of delivery. The audit form is designed to test the coherence of the course as described. Individual courses may vary in length and it is for individual participants to decide which advertised length suits their needs best.**

**However, based on community feedback, it was felt that it would be helpful to provide some guidance as to specific aspects. Most specific recommendations are given in the Notes columns. In addition it was felt that a TSST course securing IOP approval would normally be expected to take 30-50 hours to complete, excluding unmonitored independent learning time. Please note that a course submitted for auditing will not be penalised if it does not meet a stated guideline. However, the approval panel will expect to see some justification.**

**Institute of Physics will publish details of all community approved courses on the IOP website.**

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| **Name of lead school** | Trinity Academy Halifax |  |
| **Lead contact** | Anthony Hoyle |  |
| **Date submitted** | September 2018 |  |

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| **Course summary** | **Notes** |
| Teacher Subject Specialism Training: Physics This programme is for current teachers of Science, who are not Physics specialists, teaching KS3 and KS4 and for non-science specialists that may be teaching within their school setting. Over two full days, the course will explore the fundamental concepts of Physics from KS3 to KS5; in addition to looking at strategies to teach these effectively within the classroom.The focus is to address current Science, and in particular Physics staff shortages and to equip Science teachers to effectively deliver Physics from KS3 to KS4 (which now has some aspects of KS5). The course will be delivered by Trinity Academy Halifax teaching staff in conjunction with Physics partners and the IOP. | Short description of the course (e.g. objectives and expected outcomes) |

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|   | **Subject area (indicate number of hours)** |
| **Mode of delivery** | Energy | Motion & Forces | Waves | Electricity & electromagnetism | Matter & Space | Other, if any, specified below: |
| Face to Face (Presentations, lectures, guided group tutorial work with tutor present). | 2  | 2  | 2  | 2  |  2 | PAG related to the new GCSE Science courses (AQA and OCR)  |
| Practical (Hands on use of apparatus working individually or in small groups. Observation of demonstrations is not deemed to be practical work). | 1  |  1 |  1 | 1  |  1 |  0 |
| Coaching/ Mentoring (One to one or small group sessions involving coaching, mentoring or allied techniques led by an experienced practitioner). |  2 | 2  | 2  |  2 |  2 | As part of 3 Immersion days offered to each school |
| Monitored independent learning (e.g. online tutorial work). | 1 | 1 | 1  | 1  | 1  | 0 |
| Other modes (please specify below). |  2 | 2  | 2  | 2  | 2  | As part of 3 Immersion days offered to each school |
| **Total hours** | 7 | 7 | 7 | 7 | 7 | 35 |

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| **Please provide further *brief* detail on the following aspects of the course** | **Notes** |
| **Practical Work** | Specify what nature is – e.g. embedded in related session/standalone/skills focussed, work in pairs/groups. Also include Health and Safety measures in place. This will be adhered to following CLEAPSS guidelines. All direction from Dr D Gill (IOP) |
| Discussion tutorials linked to all key concepts: energy, motion and forces, electricity and electromagnetism, space and matter in addition to work specifically focussing on the new GCSE PAGs/Required Practical work.Any specific Health and Safety measures will be discussed during these sessions through Q and A.Each of the full day training sessions will offer bespoke Physics support tailored to the requirements of the attending delegates. Their needs will be assessed prior to the commencement of the training via an electronic skills audit. Delegates will also be offered follow up support from Physics partners linked to the subject matter if required, and a focus on these areas for the in school immersion days at Trinity Academy Halifax. |
| **Subject knowledge** | Please give more details on methodology of subject knowledge (e.g. lecture, practice questions, peer tutorial, diagnostic testing) |
| During the tutorial sessions there will be designated time to discuss methodology of teaching the subject content linked to GCE and GCSE specification and requirements.The immersion days will provide session time to look at specific teaching methods linked to the concepts of the course or delegate requirements.Mentoring sessions to discuss planning and peer tutorial time will be built into the immersion day timetable. All sessions will be tailored to meet the needs of the trainee.The initial skills audit will be used to assess prior Physics knowledge of each participant as an informal diagnostic test. This will provide a baseline in terms of knowledge and confidence in the teaching of each of the core key concepts within the Physics curriculum. Further skills audits will be completed during, and at the end of the course. This will provide evidence of progress made during the training.Each session will also include an evaluation form to log subject knowledge developed during the sessions. |
| **Pedagogical Content Knowledge** | Give further details on methodology used (e.g.students’ misconceptions/naïve conceptions) |
| All training sessions will tackle common student and teacher misconceptions. Common misconceptions will be discussed during training sessions with Dr D Gill IOP and Miss C. Hutton (Physics Partners) who will be leading the training.Limitations of using specific methods or models for teaching will also be covered.Discussion points linked to the new GCE and GCSE specification requirements. |
| **Research Informed Practice** | How do you propose to embed the results of research informed best practice (e.g. access to research articles)  |
| Teaching for access of linear assessment will be discussed during the sessions and how Trinity Academy Halifax are using different teaching methods to enable students to both access the new linear assessment courses together with long term retention.Attached is the research model currently adopted by Trinity Academy Halifax to support the preparation for linear assessment:Class Teaching Finding and sharing teaching 'bright spots'The following suggested reading material and publications will be issued to all delegates to support their teaching practice.How People Learn: Brain, Mind, Experience, and School - Expanded Editionedited by John D. Bransford, Ann L. Brown, and Rodney R. Cocking<https://www.compadre.org/precollege/items/Load.cfm?ID=2155>[America's Lab Report: Investigations in High School Science](file:///%5C%5Ctr-san-02%5Cusers%24%5CTrinity%20Academy%5CStaff%5CK.Walker01%5CPhysics%20hub%5CLoad.cfm%3FID%3D8607) edited by Susan R. Singer written by the National Research Council https://www.compadre.org/precollege/items/Load.cfm?ID=8607<http://www2.phy.ilstu.edu/pte/311content/effective/best_practice.html> - "Best Practices" of Science TeachingRecommended web links: <http://www.physics.org/explore.asp><http://www.iop.org/><http://www.iop.org/publications/iop/2017/page_68781.html>  |
| **Handling of Mathematical Requirements** | e.g. handling of graphical techniques, proportionality, errors. |
| Specifics to the new GCSE and GCE requirements and Maths content linked to these will be covered when looking at specific Maths style questions.During tutorial sessions Trinity Academy Halifax staff will discuss how they are working with the Maths department to adopt a common language across school to enable students to transfer skills effectively between Maths and Science lessons. In addition to this, how Science questions are now being used in Maths lessons to support all learners will also be covered. |
| **Participant Assessment Arrangements** | Use of various modes e.g. lesson observation, portfolio, diagnostic testing, etc.  |
| All staff learning logs will be collated throughout the course as a portfolio of how teaching practices will be implemented by all delegates.A record of all immersion day coaching notes will be collated as a record of support. The delegate schools will log all PM observations linked to delegate observations and QA learning walks as part of their agreement with the TSST. |
| **Quality Assurance Mechanisms** | Mention use of any form of quality assurance – use of validated material, external validation or accreditation. Please include qualifications of staff.  |
| All delegates have access to the Physics partners’ resources accredited by the IOP. The lead trainer from Physics partners is trained by the IOP and all Trinity Academy Halifax staff involved in the training programme have Physics degrees and in excess of 3 years of teaching Physics across KS3 – KS5.All training sessions will be followed up with an evaluation form to review training sessions for the previous sessions.External QA will be led by D. Kirk from the TSST, internal QA will be conducted by Dr. A. Hoyle – Science Lead Teacher & SLE. |
| **Individualisation for Participants** | Mention any separate routes possible, and how those routes are decided. |
| All delegates are non-physics specialists, newly qualified teachers and non-science specialists either teaching Science within their schools or as part of their new GCSE subjects *i.e.* Design Technology – new electronics section. |
| **Course Evaluation Mechanism** | Mention evaluation by participants, or external body, if you intend to publish survey results etc.  |
| All training sessions will be followed up with an evaluation form to review training session. |
| **Lifelong Learning of Participants** | The TSST courses are inevitably of limited duration. Explain how participants are enabled to acquire the skills for autonomous learning beyond the course itself.  |
| All delegates will be offered a mentor from Trinity Academy Halifax as part of their immersion days to discuss pedagogy and methodology of teaching specific concepts. This link will provide a long term mentor for advice following the end of the Physics hub 2018. |

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